DOCUMENT RESUME

ED 311 682 EC 221 100

AUTHOR	Haasbroek, J. B., Ed.
TITLE	Education for Highly Gifted Pupils. Report of the Work Committee.
INSTITUTION	Human Sciences Research Council, Pretoria (South Africa).
REPORT NO	ISBN-0-7969-0690-4
PUB DATE	88
NOTE	466p.; Produced by the Institute for Educational Research.
PUB TYPE	Tests/Evaluation Instruments (160) -- Guides - Non-Classroom Use (055)
EDRS PRICE	MF01/PC19 Plus Postage.
DESCRIPTORS	Ability Identification; *Curriculum Development; *Educational Practices; Elementary Secondary Education; Foreign Countries; *Gifted; Parent Attitudes; *Program Development; School Guidance; Teacher Attitudes; Teacher Education; Underachievement
IDENTIFIERS	*South Africa

ABSTRACT

This report elucidates problem areas in the education of gifted pupils in the Republic of South Africa (RSA), places the problems in perspective with respect to actual educational provision, and offers guidelines for further research on developing gifted education. Chapter titles are as follows: "Survey of Educational Planning for Gifted Pupils in the RSA;" "Provision of Education for Gifted Pupils in the RSA Up to October 1983;" "Identification of Gifted Pupils;" "The Problem of Gifted Underachievers;" "School Guidance for Gifted Pupils;" "Forming Parental and Teacher Attitudes towards Giftedness, Gifted Pupils and Education for the Gifted;" "Curriculum Development for Gifted Pupils;" "Guidelines: Curriculum Design for Subjects, Groups of Subjects and Leadership as a Specific Talent" (offers guidelines in the areas of social sciences, visual and performing arts, mathematics, technical sciences, language, natural sciences, economic sciences, and leadership development); "The Training of Teachers for Gifted Pupils;" and "Educational and Education Management Structure for the Teaching of Gifted Pupils." Appendices contain information sheets and observation checklists for parents and teachers, a gifted pupil biographical questionnaire, a personality profile of the gifted pupil, and an extensive bibliography. (JDD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

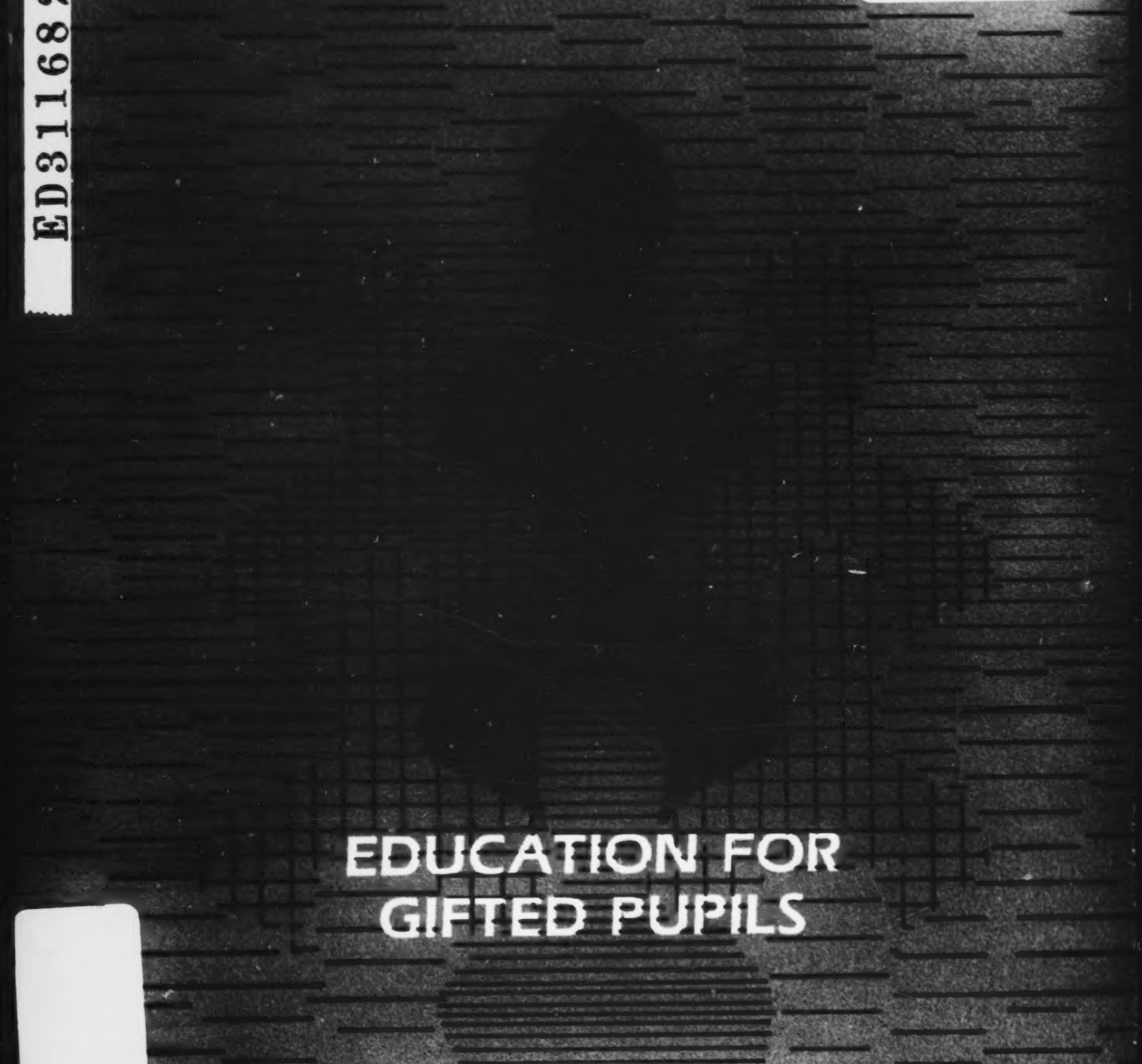
ED311682

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it

☐ Minor changes have been made to improve reproduction quality

● Points of view or opinions stated in this document do not necessarily represent official OERI position or policy



EDUCATION FOR GIFTED PUPILS

EC 221100

BEST COPY AVAILABLE

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
J.G. Garbers

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

2

Education for gifted pupils

HSRC Education Research Programme

Report of the Work Commmittee: Education for Highly Gifted Pupils

BEST COPY AVAILABLE

Pretoria
Human Sciences Research Council
1988

The Human Sciences Research Council's Institute for Educational Research is responsible for the organization and administration of the HSRC Education Research Programme

Cover design by Sandra Jansen van Rensburg, Std 6 Art course, Extra-curricular Centre for Gifted Pupils, College of Education, Pretoria

J.B. Haasbroek B.Sc., TED, D.Ed., Editor

Institute for Educational Research
Executive Director: Dr S.W.H. Engelbrecht

ISBN 0 7969 0690 4

© Human Sciences Research Council, 1988

Printed and published by HSRC
134 Pretorius Street
Pretoria

Prof. J.P. de Lange
Chairman of the Main Committee
HSRC Investigation into Education

REPORT OF THE WORK COMMITTEE: EDUCATION FOR HIGHLY GIFTED PUPILS

As chairman of the Work Committee: Education for highly gifted pupils, it is my privilege to submit the report of my work committee to you for consideration by the main committee.

The work committee trusts that its discussions, conclusions and recommendations regarding educational provision for gifted children, particularly in respect of identification, gifted underachievers, school guidance, attitude development, curriculum development, teacher training, and an education management structure and educational structure will meet with the approval of the main committee.

The work committee believes that, since this report elucidates the problem areas in the education of these pupils and places them in their proper perspective in respect of actual educational provision, it can serve as a point of departure for further research on educational provision for gifted pupils.

The work committee further trusts that the guidelines that are suggested in this report and which cover all the structures of a system of educational provision for gifted children, will make a valuable contribution towards planning and development of this type of education in the RSA.

JB Haasbroek.

J.B. HAASBROEK
CHAIRMAN
WORK COMMITTEE: EDUCATION FOR HIGHLY GIFTED PUPILS

WORK COMMITTEE: EDUCATION FOR HIGHLY GIFTED PUPILS

The members of the work committee who approved that this report could be submitted to the Chairman of the Main Committee: HSRC Investigation into Education, are the following:

JB Haasbroek.

Mr J.B. Haasbroek (Chairman and editor of the report), Director, Institute for Educational Research, HSRC

W.J. Boshoff

Dr W.J. Boshoff, Assistant-Director of Education: Specialized Services, Transvaal Education Department

J. Cawood

Prof. J. Cawood, Departmental Chairman Division: Didactics, Faculty of Education, University of Stellenbosch

Dr P.H. du Preez, Chief Education Planner: Division Special Education, Department of Education and Culture, House of Assembly

H. J. Groenewald

Dr H.J. Groenewald, First Educational Planner, Department of Education and Culture, House of Representatives

M. M. Kruger

Dr M.M. Kruger, First Educational Planner: Research, Department of Education and Training, Pretoria

Mr F.J. Neethling, Inspector Control, Department of Education of the Orange Free State

JS. Neethling

Dr J.S. Neethling, Superintendent of Education (Planning: Gifted Child), Cape Education Department

JF. Nel

Dr J.F. Nel, Centre Head: Extra Curricular Centre for Highly Gifted Pupils, Pretoria

F.L. Knoetze	Dr F.L. Knoetze, Chief Superintendent of Education (Planning), Cape Education Department
A.S. Olivier	Dr A.S. Olivier, Head, Psychological and Guidance Services, Transvaal Education Department
J.L. Omond	Mr J.L. Omond, Chairman: Office for the Gifted and Talented, Port Elizabeth
V. Poonan	Mr V. Poonan, Natal Association for Gifted Children, Durban, Natal
N.E. Roux	Dr N.E. Roux, Research Specialist, Institute for Educational Research, HSRC
P.B. Singh	Mr P.B. Singh, Chief Psychologist, Department of Education and Culture, House of Delegates
J S v d Waal	Prof. J.S. van der Walt, Department: Psychopedagogics, University of the Orange Free State
S.D. Wallace	Mr S.D. Wallace, First Educational Planner, Natal Education Department

The following persons participated as observers in the activities of the Work Committee: Education for highly gifted pupils:

Mr J.S. Labuschagne, Chief Superintendent of Education (Planning), Cape Department of Education

Dr H.J.H. Rheeders, Education Planner for Leadership and Highly Gifted Pupils, Transvaal Education Department

Dr S.W. Walters, Deputy-Director of Education (Planning), Cape Education Department

The Work Committee: Education for Highly Gifted Pupils convened eight times to discuss work documents on the education of gifted pupils.

Project Committee: Development of leadership

Prof. J. Cawood (Chairman), University of Stellenbosch

Co-workers

Dr M. Hanekom	University of Stellenbosch
Dr S.M. Conradie	University of Stellenbosch
Dr O.M. Firmani	Cape Education Department
Dr J.F. Nel	Transvaal Education Department
Dr W.J. Boshoff	Transvaal Education Department

Project Committee: Identification of gifted pupils

J.B. Haasbroek (Chairman), Institute for Educational Research, HSRC
Dr A.P. Gerber, Cape Education Department
Dr A.S. Olivier, Transvaal Education Department
Dr N.E. Roux, Institute for Educational Research, HSRC

Project Committee: School guidance for gifted pupils

Dr N.E. Roux, Institute for Educational Research, HSRC
Prof. J.S. van der Walt, University of the Orange Free State

Project: Attitude development regarding gifted child education

Dr N.E. Roux, Institute for Educational Research, HSRC

Project Committee: Guidelines for the development of curricula for subjects and subject groups

Social Sciences: Dr F.L. Knoetze, Cape Education Department
Physical Sciences: Dr S.W. Walters, Cape Education Department
Languages: Dr J.A. Pretorius, Transvaal Education Department and Miss G.M. Robertson, Natal Education Department
Technical subjects: Mr G.H. Rentzke, Transvaal Education Department
Arts: Mr J.H. Meyer, Cape Education Department
Mathematics: Mr S.D. Wallace (Chairman), Natal Education Department

Co-workers

Mr D.J. du Toit, Natal Education Department
Mr V. Naidoo, Department of Education and Culture, House of Delegates
Mr W.E. Hendricks, Department of Education and Culture, House of Representatives
Economic Subjects: Dr J.F. Malherbe, Department of Education, Orange Free State

Project: Education for gifted underachievers

Dr N.E. Roux, Institute for Educational Research, HSRC
Dr J.F. Nel, Transvaal Education Department

The secretarial services were rendered by Mrs C. de Kock and Miss U. Swanich of the Institute for Educational Research (HSRC). A sincere word of thanks to these two ladies for the secretarial services rendered.

Decisions were also taken on the contents of the work committee's report.

Mr J.B. Haasbroek (editor) and Dr N.E. Roux, both of the Institute for Educational Research, compiled the report of the work committee.

As chairman of the work committee I wish to extend a sincere word of thanks to the members of the work committee and of the project committees for their contributions and assistance in the execution of this investigation.

The following project committees under the guidance of members of the work committee compiled work documents for consideration.

Project Committee: Provision of an education framework for gifted pupils - Dr J.S. Neethling (Chairman), Cape Education Department

Co-workers

Mr K.S. Artston, Rondebosch Boys Preparatory School, Rondebosch
Mrs A.E. Borcherds, Hoër Meisieskool La Rochelle, Paarl
Mr J.J.D. Burger, Laerskool Goodwood, Goodwood
Mrs J.A. Bottaro, Westerford High School, Rondebosch
Mrs S.E. Kavanogh, S.A.C.S. Junior School, Newlands
Mr E. Ungerer, Hoërskool Durbanville, Durbanville
Mr S. du T. Pienaar, Hoërskool Gimnasium, Paarl
Mr V. Kirsten, Education Centre, Kimberley

Project Committee: Training of teachers for gifted pupils

Mr S.D. Wallace (Chairman) Natal Education Department
Dr W.J. Boshoff, Transvaal Education Department
Prof. J. Cawood, University of Stellenbosch
Dr F.L. Knoetze, Cape Education Department
Prof. J.S. van der Walt, University of the Orange Free State
Mr M. Gouws, Institute for Educational Research, HSRC

Project Committee: Curriculum development for gifted pupils

Editors

Dr W.J. Boshoff, Transvaal Education Department
Prof. J. Cawood, University of Stellenbosch

Co-workers

Dr J.M. Blackenberg	University of Stellenbosch
Dr A.E. Carl	University of Stellenbosch
Dr F.L. Knoetze	Cape Education Department
Mr J.S. Labuschagne	Cape Education Department
Dr S.W. Walters	Cape Education Department
Dr J.F. Nel	Transvaal Education Department
Dr L. Pasques	Transvaal Education Department
Dr H.J. Harmse	Department of Education and Culture: House of Representatives

CONTENTS **PAGE**

CHAPTER 1

SURVEY OF EDUCATIONAL PLANNING FOR GIFTED PUPILS IN THE RSA 1

1.1 INTRODUCTION AND ORIENTATION 1

1.2 SURVEY OF EDUCATIONAL PLANNING IN THE RSA: PROVISION OF EDUCATION FOR GIFTED PUPILS 4

1.2.1 Educational planning: 1950-1970 4

1.2.2 Educational planning on a national basis for whites 4

1.2.3 Provision of education for "highly gifted pupils" at primary school level 5

1.2.4 Provision of education for "highly gifted pupils" at secondary school level 5

1.2.5 Résumé 7

1.3 FINDINGS OF THE HSRC INVESTIGATION INTO EDUCATION: PROVISION OF EDUCATION FOR GIFTED PUPILS 7

1.3.1 General remarks 7

1.3.2 Identification of "highly gifted pupils" 8

1.3.3 Provision of education for "highly gifted pupils" in the RSA 9

1.3.4 Training of teachers for the education of "highly gifted pupils" 9

1.3.5 Recommendations of the Work Committee: Special Educational needs 9

1.3.6 Recommendations of the Main Committee of the HSRC Investigation into Education 10

1.3.7 Résumé 10

1.4 OPERATIONALISATION OF RESEARCH 11

1.4.1 Brief 11

1.4.2 Research method 13

1.5 DEFINITION AND CATEGORISATION OF GIFTED PUPILS 13

1.5.1 Definitions of giftedness in some overseas countries, with intellectual ability as the main criterion of giftedness 14

CONTENTS PAGE

1.5.2 Definitions of giftedness in overseas countries which use giftedness as an umbrella term for a variety of outstanding personal qualities 15

1.5.3 Conclusions regarding the foregoing definitions as used in certain overseas countries 17

1.6 DEFINITION OF GIFTED PUPILS 17

1.7 RÉSUMÉ 19

CHAPTER 2

PROVISION OF EDUCATION FOR GIFTED PUPILS IN THE RSA UP TO OCTOBER 1983 20

2.1 INTRODUCTION 20

2.2 PROVISION OF EDUCATION FOR GIFTED PUPILS BY EDUCATIONAL AUTHORITIES UP TO OCTOBER 1983 21

2.2.1 Transvaal Education Department 21

2.2.2 Cape Education Department 21

2.2.3 Natal Education Department 22

2.2.4 Division of Indian Education (Department of Education and Culture: House of Delegates) 23

2.2.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives) 23

2.2.6 Department of Education and Training 23

2.2.7 Conclusion 23

2.3 DEFINITION OF GIFTEDNESS AND GIFTED PUPILS 23

2.3.1 Transvaal Education Department 23

2.3.2 Cape Education Department 24

2.3.3 Natal Education Department 25

2.3.4 Division of Indian Education (Department of Education and Culture: House of Delegates) 25

2.3.5 Conclusion 25

CONTENTS PAGE

2.4 IDENTIFICATION OF GIFTED PUPILS 25

2.4.1 Transvaal Education Department 25

2.4.2 Cape Education Department 26

2.4.3 Natal Education Department 28

2.4.4 Division of Indian Education (Department of Education and Culture: House of Delegates) 28

2.4.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives) 28

2.4.6 Department of Education and Training 28

2.4.7 Conclusion 29

2.5 EDUCATIONAL PROGRAMMES FOR GIFTED PUPILS 29

2.5.1 Transvaal Education Department 29

2.5.2 Cape Education Department 29

2.5.3 Natal Education Department 30

2.5.4 Division of Indian Education (Department of Education and Culture: House of Delegates) 30

2.5.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives) 30

2.5.6 Department of Education and Training 30

2.5.7 Conclusion 31

2.6 EDUCATIONAL FACILITIES FOR GIFTED PUPILS 31

2.6.1 Transvaal Education Department 31

2.6.2 Cape Education Department 32

2.6.3 Natal Education Department 32

2.6.4 Division of Indian Education (Department of Education and Culture: House of Delegates) 32

2.6.5 Conclusion 32

CONTENTS **PAGE**

2.7 SELECTION AND TRAINING OF TEACHERS EMPLOYED BY EDUCATION DEPARTMENTS FOR THE EDUCATION OF GIFTED PUPILS 32

2.7.1 Transvaal Education Department 32

2.7.2 Cape Education Department 33

2.7.3 Natal Education Department 34

2.7.4 Division of Indian Education (Department of Education and Culture: House of Delegates) 35

2.7.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives) 35

2.7.6 Department of Education and Training 35

2.7.7 Conclusion 35

2.8 EDUCATION FOR GIFTED HANDICAPPED PUPILS 36

2.9 EDUCATION FOR GIFTED UNDERACHIEVERS 36

2.10 COUNSELLING OF GIFTED PUPILS AND THEIR PARENTS 36

2.10.1 Transvaal Education Department 36

2.10.2 Cape Education Department 36

2.10.3 Natal Education Department 37

2.10.4 Division of Indian Education (Department of Education 37
and Culture: House of Delegates)

37

2.10.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives) 37

2.10.6 Conclusion 37

2.11 RÉSUMÉ 37

2.11.1 Provision of education for gifted pupils 37

2.11.2 Definition and categorisation of gifted pupils 37

2.11.3 Identification of gifted pupils 37

2.11.4 Design of programmes for gifted pupils 38

2.11.5 Educational facilities for gifted pupils 38

2.11.6 Selection and training of teachers for gifted pupils 38

CONTENTS **PAGE**

2.11.7 Education for gifted handicapped pupils and gifted underachievers 38

2.11.8 School guidance for gifted pupils 39

2.12 CONCLUDING REMARK 39

CHAPTER 3

IDENTIFICATION OF GIFTED PUPILS 40

3.1 INTRODUCTION 40

3.2 REQUIREMENTS FOR AN IDENTIFICATION PROCEDURE 41

3.2.1 Relation between the definition and categorisation of gifted pupils and their identification 41

3.2.2 Effectiveness of the identification procedure 41

3.2.3 Identification of culturally dissimilar gifted pupils 42

3.2.4 Identification of gifted underachievers 42

3.2.5 Early identification of gifted pupils 43

3.2.6 Continuous evaluation of gifted pupils 43

3.2.7 Responsible interpretation of results of media used in the identification procedure 44

3.2.8 Uniqueness of the individual gifted pupil 44

3.2.9 Identification of gifted pupils on the basis of a comprehensive personal profile 45

3.2.10 Relation between identification procedure and the provision of education 46

3.2.11 Conclusion 47

3.3 MEDIA AND CRITERIA FOR THE IDENTIFICATION OF GIFTED PUPILS 47

3.3.1 Microlevel planning 47

3.3.2 Media used in the identification procedure 52

3.3.3 Other criteria for the identification of gifted pupils 65

3.3.4 Media and criteria for the identification of specifically gifted pupils 70

3.4 PROCEDURES AND MODELS FOR THE IDENTIFICATION OF GIFTED PUPILS 82

3.4.1 Introduction 82

3.4.2 Model for the identification of gifted pupils 83

3.5 CONFIDENTIALITY OF INFORMATION ABOUT GIFTED PUPILS 109

3.6 **CONCLUDING REMARKS** 109

CHAPTER 4

THE PROBLEM OF GIFTED UNDERACHIEVERS 111

4.1 INTRODUCTION 111

4.2 DEFINITION OF THE CONCEPT OF UNDERACHIEVEMENT 111

4.2.1 Various definitions 111

4.2.2 Extent of underachievement among gifted pupils 112

4.2.3 Categories of gifted underachievers 113

4.3 IMPLICATIONS OF UNDERACHIEVEMENT AMONG GIFTED PUPILS 113

4.3.1 Implications pertaining to the high-level manpower situation in the RSA 113

4.3.2 Implications for positive, optimal personal development 114

4.4 POSSIBLE CONTRIBUTORY FACTORS IN THE UNDERACHIEVEMENT OF GIFTED PUPILS 114

4.4.1 Introduction 114

4.4.2 A personal choice by a gifted pupil 114

4.4.3 Learning impairment 115

4.4.4 The school situation 115

4.4.5 The home environment 117

4.4.6 Dissimilar cultural environment 119

4.4.7 Geographical isolation 119

4.4.8 Self-concept as a factor in the actualisation of giftedness 119

CONTENTS **PAGE**

4.4.9 Manifestations 120

4.4.10 Résumé 125

4.5 ONSET OF UNDERACHIEVEMENT 125

4.5.1 Importance of early identification 126

4.6 GUIDELINES FOR A SYSTEM OF EDUCATION PROVISION FOR GIFTED UNDERACHIEVERS 127

4.6.1 Purpose of such a system 127

4.6.2 Provision of education for gifted underachievers 127

4.7 CONCLUDING REMARKS 139

CHAPTER 5

SCHOOL GUIDANCE FOR GIFTED PUPILS 140

5.1 PREMISE, STATING THE PROBLEM AND RESEARCH OBJECTIVE 140

5.1.1 Premise 140

5.1.2 Stating the problem 140

5.1.3 Research objective 140

5.2 CHARACTERISTICS AND NEEDS OF GIFTED PUPILS 141

5.2.1 Introduction 141

5.2.2 Some characteristics of gifted pupils 141

5.2.3 The gifted pupil en route to adulthood 142

5.2.4 Distinctive needs of gifted pupils 143

5.2.5 Perspective 148

5.3 RECOMMENDATIONS REGARDING SCHOOL GUIDANCE FOR GIFTED PUPILS 148

5.3.1 Introduction 148

5.3.2 Aim of school guidance for gifted pupils 149

5.3.3 Nature of school guidance for gifted pupils 150

5.3.4 Extent of school guidance for gifted pupils 151

5.3.5 Recommended ways of providing school guidance for gifted pupils 151

5.3.6 Perspective 152

5.4 CONCLUDING REMARKS 152

CHAPTER 6

FORMING PARENTAL AND TEACHER ATTITUDES TOWARDS GIFTEDNESS, GIFTED PUPILS AND EDUCATION FOR THE GIFTED 153

6.1 ORIENTATION, STATING THE PROBLEM AND RESEARCH OBJECTIVE 153

6.1.1 Orientation 153

6.1.2 Definition: attitudes and how they are formed 153

6.1.3 Stating the problem 154

6.1.4 Research objective 154

6.2 AIM OF FORMING PARENTAL AND TEACHER ATTITUDES TOWARDS GIFTEDNESS, GIFTED PUPILS AND EDUCATION FOR GIFTED PUPILS 155

6.3 FORMING POSITIVE PARENTAL AND TEACHER ATTITUDES TOWARDS GIFTEDNESS, GIFTED PUPILS AND EDUCATION FOR GIFTED PUPILS 155

6.3.1 Hallmarks of a positive attitude 155

6.3.2 Strategies for forming positive parental and teacher attitudes towards giftedness, gifted pupils and education for gifted pupils 156

6.3.3 Guidelines for parents and teachers who deal with gifted pupils 160

6.4 CONCLUSION AND RECOMMENDATIONS 191

CHAPTER 7

CURRICULUM DEVELOPMENT FOR GIFTED PUPILS 194

7.1 ORIENTATION AND DEFINITION 194

7.1.1 Introduction 194

7.1.2 Defining the concept 194

CONTENTS PAGE

7.2 MODELS OF CURRICULUM DEVELOPMENT 196

7.2.1 Systematic representation of the curriculum development model of R.A. Krüger 196

7.2.2 The curriculum development model of S.W. Walters 197

7.2.3 The curriculum development model of Cawood, Carl and Blanckenberg 198

7.3 STEPS IN CURRICULUM DEVELOPMENT 198

7.3.1 Situation analysis 199

7.3.2 Formulation of aims 200

7.3.3 Selection and organisation of learning content 200

7.3.4 Didactic guidelines/learning opportunities 204

7.3.5 Evaluation in curriculum development 204

7.4 SOME REQUIREMENTS THAT CURRICULA FOR GIFTED CHILDREN SHOULD SATISFY IN ORDER TO CATER FOR THEIR LEARNING AND EDUCATIONAL NEEDS 206

7.4.1 Commitment to a task 206

7.4.2 Attention to the gifted child in his totality 206

7.4.3 Specific provision for the actualisation and development of creative abilities 207

7.4.4 Fluidity and openness 207

7.4.5 Compatibility with the existing framework and microlevel policy 208

7.4.6 Provision for extramural programmes 208

7.5 CURRICULUM DEVELOPMENT FOR EXTRACURRICULAR CENTRES FOR GIFTED PUPILS 208

7.6 CURRICULUM DEVELOPMENT FOR INDIVIDUAL GIFTED PUPILS 210

7.7 RECOMMENDATIONS REGARDING CURRICULUM DEVELOPMENT FOR GIFTED PUPILS 211

7.7.1 A model for curriculum development 211

CONTENTS PAGE

7.7.2 Curriculum development on a national basis 211

7.7.3 Further research 212

7.8 CONCLUDING REMARKS 212

CHAPTER 8

GUIDELINES: CURRICULUM DESIGN FOR SUBJECTS, GROUPS OF SUBJECTS AND LEADERSHIP AS A SPECIFIC TALENT 213

8.1 INTRODUCTION 213

8.2 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE SOCIAL SCIENCES FOR GIFTED PUPILS 213

8.2.1 Introduction 213

8.2.2 Aims as a component of subject curriculum design 214

8.2.3 Principles of curriculum development for the social sciences 216

8.2.4 Teaching strategies or ways of dealing with pupils 217

8.2.5 Evaluation 220

8.2.6 Concluding remarks 221

8.3 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE VISUAL AND PERFORMING ARTS (ART, MUSIC AND BALLET) FOR GIFTED PUPILS 221

8.3.1 Aims and guidelines: designing art curricula for gifted pupils 221

8.3.2 Aims and guidelines: designing music curricula for gifted pupils 225

8.3.3 Concluding remarks 228

8.4 AIMS AND GUIDELINES: CURRICULUM DESIGN IN MATHEMATICS FOR GIFTED PUPILS 228

8.4.1 Introduction 228

8.4.2 Guidelines: curriculum design for mathematically gifted pupils 230

8.4.3 Teaching strategies 231

8.4.4 Evaluation of work done 232

8.5 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE TECHNICAL SCIENCES FOR GIFTED PUPILS 232

8.5.1 Introduction 232

8.5.2 Aims as a component of curriculum design for the technical sciences 232

8.5.3 Guidelines: curriculum design for the technical sciences 233

8.5.4 Teaching strategies 234

8.5.5 Concluding remarks 234

8.6 AIMS AND GUIDELINES: LANGUAGE CURRICULUM DESIGN FOR GIFTED PUPILS 234

8.6.1 The specific characteristics of gifted linguists 234

8.6.2 Aims for a language curriculum design for gifted pupils 236

8.6.3 Guidelines: language curriculum design for gifted pupils 243

8.6.4 Teaching strategies with a view to the study of language 251

8.6.5 Concluding remarks 252

8.7 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE NATURAL SCIENCES FOR GIFTED PUPILS 252

8.7.1 Distinctive character of the natural sciences 252

8.7.2 Aims of the natural sciences as school subjects 253

8.7.3 Implications of the aims of the natural sciences for the design of curricula for gifted pupils 255

8.7.4 Teaching-learning opportunities for the scientifically gifted pupil 256

8.7.5 The teacher of the scientifically gifted pupil 257

8.7.6 Evaluation 258

8.7.7 Concluding remarks 260

8.8 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE ECONOMIC SCIENCES FOR GIFTED PUPILS 260

8.8.1 Introduction 260

8.8.2 Aims and guidelines: curriculum design in Accounting and Business Mathematics for gifted pupils 260

8.8.3 Aims and guidelines: curriculum design in the subjects Economics, Business Economics and Mercantile Law for gifted pupils 261

8.8.4 Concluding remarks 264

8.9 AIMS AND GUIDELINES: DESIGNING A CURRICULUM FOR LEADERSHIP DEVELOPMENT AMONG GIFTED PUPILS 264

8.9.1 Defining the talent leadership 264

8.9.2 Guidelines: designing a curriculum for leadership development 265

8.9.3 Proposed provision of education in leadership as a special form of giftedness: a rationale for leadership development 265

8.9.4 Guidelines: designing a curriculum for leadership development in a class and subject context 266

8.9.5 Guidelines: designing a curriculum for leadership development by means of school subject clubs and other associations 267

8.9.6 A magnet class for leadership development 268

8.9.7 The prefect system at primary and secondary schools 269

8.9.8 Leadership development through school sport 270

8.9.9 Extramurally centred leadership development: head prefects 271

8.9.10 Leadership development outside the school context: high profile leaders (Standards 6 - 10) 271

8.10 RECOMMENDATIONS: CURRICULUM DESIGN FOR SUBJECTS, GROUPS OF SUBJECTS AND LEADERSHIP DEVELOPMENT 272

8.11 CONCLUDING REMARKS 272

CHAPTER 9

THE TRAINING OF TEACHERS FOR GIFTED PUPILS 273

9.1 INTRODUCTION 273

9.2 CURRENT SITUATION IN THE RSA WITH REGARD TO THE TRAINING OF TEACHERS FOR GIFTED PUPILS 273

CONTENTS PAGE

9.2.1 A study of the current situation regarding the training of teachers for gifted pupils 273

9.2.2 University training of teachers for gifted pupils 273

9.2.3 College training of teachers for gifted pupils 273

9.2.4 Other findings based on the questionnaire 273

9.2.5 Concluding remarks on the training of teachers for gifted pupils in the RSA 274

9.3 THE TRAINING OF TEACHERS FOR GIFTED PUPILS IN THE USA 274

9.3.1 Introduction 274

9.3.2 Some examples of training courses in the USA 274

9.3.3 Major features of the training of teachers for gifted pupils in the USA 274

9.3.4 Evaluation 275

9.4 A PROPOSED MODEL FOR THE TRAINING OF TEACHERS FOR GIFTED PUPILS AT SECONDARY SCHOOLS (JUNIOR AND SENIOR SECONDARY PHASE OF POSTBASIC EDUCATION) IN THE RSA 275

9.4.1 Desirability of training secondary school teachers for gifted pupils 275

9.4.2 The connection between definition, categorisation, education provision and curriculum development on the one hand and teacher training on the other 276

9.4.3 The problem of modular subject matter in existing courses versus specialised diplomas or degrees 277

9.4.4 The need for research backing for the training of teachers for gifted children 277

9.4.5 A proposed model for the training of teachers to conduct gifted child education at secondary schools 277

9.4.6 Concluding remarks 282

9.5 A PROPOSED MODEL FOR THE TRAINING OF TEACHERS FOR GIFTED PUPILS AT PRIMARY SCHOOLS 282

9.5.1 Introduction 282

9.5.2 A proposed curriculum for an optional full course in gifted child education with a view to a four-year Higher Diploma in Education (HDE) 282

CONTENTS PAGE

10.4.2 Differentiation strategies aimed at ensuring education provision for gifted pupils* 312

10.4.3 Forms of education for gifted pupils in the school* 313

10.5 RECOMMENDATIONS CONCERNING FORMS OF EDUCATION FOR GIFTED PUPILS 314

10.6 PROVISION OF EDUCATION FOR GIFTED HANDICAPPED PUPILS 319

10.6.1 Note 319

10.6.2 Identification of gifted handicapped pupils 319

10.6.3 Educational programmes for gifted handicapped pupils 320

10.6.4 Recommendations regarding the identification of gifted handicapped pupils 320

10.6.5 Recommendations concerning the planning of educational programmes 321

10.6.6 Recommendations concerning school guidance 321

10.6.7 Recommendations regarding an educational and education management structure 321

10.7 CONCLUDING REMARKS 321

ADDENDUM A INFORMATION SHEET 1: INFORMATION SHEET FOR PARENTS CONCERNING INTELLECTUALLY GIFTED PUPILS 323

ADDENDUM B INFORMATION SHEET 2: INFORMATION SHEET FOR TEACHING STAFF CONCERNING INTELLECTUALLY GIFTED PUPILS 328

ADDENDUM C INFORMATION SHEET 3: INFORMATION SHEET FOR PARENTS AND TEACHING STAFF CONCERNING GIFTED UNDERACHIEVERS 334

ADDENDUM D INFORMATION SHEET 4: INFORMATION SHEET FOR PARENTS AND TEACHING STAFF CONCERNING SPECIFICALLY GIFTED PUPILS 341

ADDENDUM E INFORMATION SHEET 5: INFORMATION SHEET FOR TEACHING STAFF CONCERNING CULTURALLY DISSIMILAR GIFTED PUPILS 349

ADDENDUM F INFORMATION SHEET 6: INFORMATION SHEET FOR PARENTS AND TEACHING STAFF CONCERNING GIFTED PREPRIMARY PUPILS 353

ADDENDUM G CHECKLIST 1: STRUCTURED OBSERVATION BY PARENTS: IDENTIFICATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST 355

CONTENTS **PAGE**

ADDENDUM H CHECKLIST 2: STRUCTURED OBSERVATION BY TEACHING STAFF: IDENTIFICATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST 363

ADDENDUM I **CHECKLIST 3: STRUCTURED OBSERVATION BY PEER GROUP: NOMINATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST** 373

ADDENDUM J CHECKLIST 4: STRUCTURED OBSERVATION BY TEACHING STAFF: IDENTIFICATION OF POSSIBLY GIFTED PREPRIMARY PUPILS BY MEANS OF A CHECKLIST 375

ADDENDUM K CHECKLIST 5: STRUCTURED OBSERVATION BY PARENTS: IDENTIFICATION OF POSSIBLY GIFTED PREPRIMARY PUPILS BY MEANS OF A CHECKLIST 378

ADDENDUM L CHECKLIST 6: CHECKLIST FOR IDENTIFICATION OF GIFTED PUPILS WITH EXCEPTIONAL CREATIVE ABILITIES 381

ADDENDUM M BIOGRAPHICAL QUESTIONNAIRE 387

ADDENDUM N PERSONALITY PROFILE OF THE GIFTED PUPIL 397

BIBLIOGRAPHY 411

CHAPTER 1

SURVEY OF EDUCATIONAL PLANNING FOR GIFTED PUPILS IN THE RSA

1.1 INTRODUCTION AND ORIENTATION

In June 1980 the Human Sciences Research Council was requested by the Cabinet to investigate education in the RSA. The request to the HSRC read as follows:

"Your Council, in co-operation with all interested parties, must conduct a scientific and co-ordinated investigation and within 12 months make recommendations to the Cabinet on

(a) guiding principles for a feasible education policy in the RSA in order to

  (i) allow for the realisation of the inhabitants' potential,

  (ii) promote economic growth in the RSA, and

  (iii) improve the quality of life of all the inhabitants of the country

(b) the organisation and control structure and financing of education

(c) machinery for consultation and decision making in education

(d) an education infrastructure to provide for the manpower requirements of the RSA and the self-realization of its inhabitants, and

(e) a programme for making available education of the same quality for all population groups.

"The investigation must be conducted in the light of, among other things, the present educational situation, the population composition in South African society and the means that can be made available for education in the national economy. The investigation must cover all levels of education, i.e. preprimary, primary, secondary and tertiary education."

The investigation was led by the Main Committee of the HSRC Investigation into Education under the chairmanship of Professor J.P. de Lange, Principal of the Randse Afrikaanse Universiteit. Prominent educationists, other educational experts and interested parties from all population groups served on the Main Committee.

For the execution of its research task, the Main Committee nominated work committees to study different fields of education and submit reports with recommendations to the Main Committee.

To carry out the Cabinet's request for guiding principles for a feasible educational policy with regard to

* realisation of the potential of all the inhabitants of the RSA,
* improving the quality of life of all the inhabitants,

- providing equal educational opportunities,
- providing for the country's manpower requirements,
- promoting the economic growth of the country,

it was necessary to formulate principles of education provision for the establishment of an appropriate system for the RSA.

The Main Committee reached consensus on the following set of principles for the provision of education:

"Principle 1

Equal opportunities for education, including equal standards in education, for every inhabitant, irrespective of race, colour, creed or sex, shall be the purposeful endeavour of the state.

Principle 2

Education shall afford positive recognition of what is common as well as what is diverse in the religious and cultural way of life and the languages of the inhabitants.

Principle 3

Education shall give positive recognition to the freedom of choice of the individual, parents and organisations in society.

Principle 4

The provision of education shall be directed in an educationally responsible manner to meet the needs of the individual as well as those of society and economic development, and shall, *inter alia,* take into consideration the manpower needs of the country.

Principle 5

Education shall endeavour to achieve a positive relationship between the formal, non-formal and informal aspects of education in the school, society and family.

Principle 6

The provision of formal education shall be a responsibility of the state provided that the individual, parents and organised society shall have a shared responsibility, choice and voice in this matter.

Principle 7

The private sector and the state shall have a shared responsibility for the provision of non-formal education.

Principle 8

Provision shall be made for the establishment and state subsidisation of private education within the system of providing education.

Principle 9

In the provision of education the processes of centralisation and decentralisation shall be reconciled organisationally and functionally.

Principle 10

The professional status of the teacher and lecturer shall be recognised.

Principle 11

Effective provision of education shall be based on continuing research" (Report of the Main Committee of the HSRC Investigation into Education 1981: 14-16).

These eleven principles provided the basis for the formulation of a system of education provision designed to realise the potential and improve the quality of life of the country's inhabitants and to promote the economic growth of the RSA. The formulated system of education provision is composed of the following constituent structures:

(i) Educational structure (teaching and learning situations),

(ii) structure of supporting services, including a school guidance service, medical and health services and remedial education services,

(iii) physical structure (building complexes and related matters),

(iv) training structure,

(v) financing structure, and

(vi) control and administrative structure (decision-making authority).

The Main Committee's procedure of first formulating a set of principles for education provision which would serve as a basis for the system of education provision, and planning all the constituent structures jointly and separately in an integrated way represented a departure from past educational planning methods.

In the investigation into the provision of education for gifted pupils, the principles and constituent structures of the overall system of education provision will have to be taken into account, since this is the system within which the educational needs of gifted pupils will have to be met.

The question is whether or not past educational planning in fact catered for the educational needs of gifted pupils.

1.2 SURVEY OF EDUCATIONAL PLANNING IN THE RSA: PROVISION OF EDUCATION FOR GIFTED PUPILS

1.2.1 Educational planning: 1950-1970

Committees of investigation appointed by the various education departments for whites consistently stressed that individual differences between pupils should receive attention in educational planning. Accordingly the planning and reform of white education between 1950 and 1970 catered for pupils' educational needs on the basis of individual differences.

The result was a system of dual and triple streaming of differentiated mainstream education so as to provide education for pupils in accordance with their intellectual ability, aptitude and interests.

1.2.2 Educational planning on a national basis for whites

In 1964 the National Advisory Education Council appointed a pilot committee to explore the education for whites at the time with a view to planning a system of differentiated education. In its report the pilot committee commented as follows:

"As is apparent from the above report, all the education departments have not made the same progress in the field of differentiated education and the methods which are employed differ from others in many respects. There is considerable agreement as to what should be understood by differentiated education, and all the education departments are convinced of the necessity of differentiated education. The differences come to the fore in its actual application. It is not possible at this stage to identify the problems for research with regard to a generally acceptable plan, since the problems will crop up when such a joint plan received consideration. It appears to be desirable and essential to start the development of a joint plan without delay" (HSRC 1970: (3)).

The need for differentiated education arises because, despite the fact that all people are equal, as human beings there are qualitative differences with regard to such factors as intellectual capacity, aptitude, interest and affectiveness. These individual differences between people, and hence between children as well, necessitate differentiated education in order to afford pupils the opportunity to receive an education that is in keeping with their abilities.

The Committee for Differentiated Education and Guidance was established and, in order to carry out its brief, it made use of the research conducted by the National Bureau for Educational and Social Research into a system of differentiated education. The committee formulated the task of such a system as follows:

"The task of a system of differentiated education is

(1) to supply pupils with differentiated education in accordance with their abilities, so that they will be able to attain full development;

(2) to supply differentiated education which will link up with the demands which are posed in connection with postschool vocational training;

(3) to give pupils guidance relating to their educational and vocational choices so that the country's manpower needs can also be provided for" (HSRC 1971: 125).

It would appear that individual differences between pupils were taken into account in the planning of the differentiated education system, since it provided educational opportunities for both mainstream and gifted pupils. The Committee for Differentiated Education and Guidance singled out gifted pupils, describing them as a group of pupils with distinctive educational needs demanding special education provision (HSRC 1971: 168-169 and 177-183).

The committee recommended that the individual educational needs of gifted pupils be provided for by means of individualisation and informal, flexible intraclass grouping. Since the provision of education for gifted pupils in an ordinary class context poses problems, the committee felt that organisational measures should be introduced and consideration given to special curricula and syllabi for gifted pupils (HSRC 1971: 168-169 and 177-183).

1.2.3 Provision of education for "highly gifted pupils" at primary school level

With regard to the provision of education for "highly gifted pupils" in primary schools, the committee recommended the following:

(i) The "highly gifted primary school pupils" should remain in the primary school and should be grouped in homogeneous classes on the basis of proficiency and be educated accordingly.

(ii) If homogeneous class grouping is impossible owing to small numbers, "highly gifted pupils" should receive special education (individualised education) as a group (intraclass grouping).

(iii) Acceleration and enrichment should be introduced where necessary to enable "highly gifted pupils" to progress at their own tempo.

(iv) The curriculum and syllabus contents should pose a challenge to "highly gifted pupils" (HSRC 1970: 168-169).

1.2.4 Provision of education for "highly gifted pupils" at secondary school level

In the senior secondary school phase differentiated education is offered to cater for the educational needs of pupils in accordance with their ability. Through differentiated education pupils receive an education, in keeping with their aptitudes and interests, that links up with their postschool training. In this way the manpower requirements of the country are also taken into account.

The Committee for Differentiated Education and Guidance recommended the following fields of study: technical, commercial, agricultural, natural sciences and art (HSRC 1971: 181-182);

The committee moreover recommended that the different fields of study be offered at specific secondary schools to ensure that education in accordance with pupils' abilities is provided as effectively as possible. It recommended the following types of schools: general secondary schools, technical high schools, agricultural high schools, commercial high schools and art schools (schools for ballet, art and music) (HSRC 1971: 185-186);

To cater for individual differences in pupils' intellectual ability, aptitudes, interests and the like within a particular field of study, the committee recommended differentiated syllabi which would enable students within a given field of study to take subjects at a standard or advanced (higher) level (HSRC 1971: 184-185). The committee also recommended that pupils should take as many subjects at the advanced level as their own ability and circumstances permitted (HSRC 1971: 184).

The achievement of homogeneous grouping, individualised education and correct choices regarding field study and subject groupings, with subjects at the higher (advanced level syllabi) and lower (standard level syllabi) grades, demands effective school guidance. The committee accordingly recommended that pupils be subjected to identificatory screening so that a picture of their abilities could be formed. On the basis of the results of such tests their educational needs could then be determined and they could receive guidance in their choice of a study direction and of specific subjects (HSRC 1970: 167?). The committee describes the significance of school guidance as follows:

The aim of a system of secondary education is to provide differentiated education in accordance with the abilities, aptitude and interest of pupils, with due allowance for the manpower requirements of the country and with the accent on the guidance of pupils to moral independence. In order to achieve this aim, pupils should receive such guidance as will enable them to make an occupationally directed educational choice. They should then receive education that will not neglect their moulding as persons. "The aim of guidance as a service within an educational system, is to provide assistance whereby pupils will be guided in respect of educational and vocational matters and in the light of their person structure in such a way that they can receive differentiated education in accordance with their ability, aptitude, interest and the manpower demands of the country. In doing so, the aim of the educational system will be realised. For the latter to take place, guidance as a service within an educational system must be an educational auxiliary service in all schools and must be administered by specialists. Its activities must result in all young persons being orientated in the light of their person structures and with regard to educational and vocational matters" (HSRC 1971: 194).

Since 1972 the system of differentiated education proposed by the committee, the main elements of which have been outlined above, has been implemented by all education departments in accordance with their particular circumstances.

1.2.5 Résumé

The HSRC's research into differentiated education, on the basis of which the Committee for Differentiated Education and Guidance recommended the system of differentiated education currently in force, achieved the following with regard to education provision for "highly gifted pupils":

(i) The system caters for the individual educational needs of pupils, including "highly gifted pupils".

(ii) Differentiated fields of study and subject grouping within a given field of study allow for the aptitudes and interests of pupils, including "highly gifted pupils".

(iii) Differentiated syllabi enable pupils to take subjects at the higher or standard grade. In this way provision is made for the intellectual ability of pupils/"highly gifted pupils".

(iv) The identification of pupils' abilities to determine their educational needs, so that they may be guided in the choice of a study direction and subjects, enables pupils - including the "highly gifted" - to actualise their potential optimally.

It appears, then, that through differentiated education the education departments are providing for pupils in accordance with their abilities. An important point is that through particular fields of study, subject grouping and differentiated (higher and standard grade) syllabi, "highly gifted pupils" too are given educational opportunities to realise their exceptional abilities. The fact is, however, that no special provision has been made for the educational needs of "highly gifted pupils" as a separate group.

1.3 FINDINGS OF THE HSRC INVESTIGATION INTO EDUCATION: PROVISION OF EDUCATION FOR GIFTED PUPILS

1.3.1 General remarks

In its report, published in June 1981, the Work Committee: Education for Children with Special Educational Needs (henceforth abbreviated to Work Committee: Special Educational Needs) examined the provision of education for "highly gifted pupils" up to the end of 1980. The work committee pointed out that the dearth of data on the incidence of "highly gifted pupils" made it impossible to establish their actual numbers. According to the work committee this can be attributed to the following factors:

* Up to now "highly gifted pupils" have been taught mainly within mainstream education and in no way have they been identified as a group meriting any form of special education provision.

- The identification of "highly gifted pupils" is related to the criteria applied for this purpose and it is clear that no one has yet succeeded in formulating a set of uniform criteria that can enjoy recognition in all quarters.

- Interest in the problems surrounding the education of the "highly gifted child" has come strongly to the fore only in the last two decades, with the result that a new field of study has been established that will gradually be developed.

- The data that are available at present on properly identified "highly gifted pupils" give only a very rough idea of the real number of pupils, the reason for this being limited involvement with the "highly gifted child" up to the present time (Work Committee 8 1981: 69).

The Work Committee: Special Educational Needs distinguished three areas that required attention in the planning of education for "highly gifted pupils": identification, provision of education and training of staff.

1.3.2 Identification of "highly gifted pupils"

The Work Committee: Special Educational Needs found that early identification of "highly gifted pupils" was beneficial provided there were special educational programmes in which they could participate.

Since up to 1980 no special education had been provided for "highly gifted pupils", their identification was purely fortuitous and the subsequent handling of such children in the educational situation was problematic (Work Committee 8 1981: 70). (The extension of the period to include the year 1980 was made by the chairman, Work Committee: Education for Gifted Pupils.)

As for ways and means of identification, the Work Committee: Special Educational Needs commmented as follows:

(i) In overseas countries "highly gifted pupils" are identified either in terms of intellectual ability as the sole criterion or else on the basis of a personal profile (case history) which includes other identificatory criteria as well.

(ii) In the RSA the HSRC Talent Survey specifies an IQ of 127 (NSAGT) as a cut-off point when intellectual ability is the sole criterion. The Schmerenbeck Centre specifies an IQ of 135 (NSAGT).

(iii) In compiling a personal profile for the identification of "highly gifted pupils", the criteria are: scores in individual or group intelligence tests, aptitude tests and interest questionnaires, performance in school subjects, evaluation by parents, teachers and peer group, and performance both at school and in extramural activities (Work Committee 8 1981: 70-71).

1.3.3 Provision of education for "highly gifted pupils" in the RSA

The Work Committee: Special Educational Needs comments as follows on the provision of education for "highly gifted pupils" by the various education departments:

(i) Since 1980 the Cape Education Department has given attention to the education of "highly gifted pupils" by means of a decentralised form of enrichment and pull-out within ordinary school systems.

(ii) The Transvaal Education Department has established extracurricula centres to cater for the educational needs of "highly gifted pupils".

(iii) The Natal Education Department devotes special attention to the identification of "highly gifted pupils" and offers them special educational programmes (Work Committee: Special Educational Needs 1981: 72-73).

1.3.4 Training of teachers for the education of "highly gifted pupils"

Teacher training courses do not cater for the education of "highly gifted pupils" (Work Committee: Special Educational Needs 1981: 73). Those education departments that provide for the education of "highly gifted pupils" introduced in-service training programmes in 1981.

1.3.5 Recommendations of the Work Committee: Special Educational Needs

The Work Committee: Special Educational Needs concludes the section on the provision of education for "highly gifted pupils" as follows:

* Enough research has been carried out to prove that uniform terminology can be used and that in the case of "highly gifted children" early recognition is essential. The latter is a highly specialized task in which, in the first phase, a panel is best equipped to do the initial identification and in the second phase a more intensive investigation should follow. This is an extremely difficult task and the necessary psychometric instruments are still lacking to a large extent. The younger the child the more difficult the task is. At this point in time the identification of the environmentally deprived "highly gifted pupil" is a question that requires urgent research.

* The design of educational programmes for "highly gifted pupils" forms the core of education provision for these children. These programmes should cater for the specific interests of individual pupils and should as far as possible be designed for all school subjects. The design of improved individualised interactive computor-assisted educational programmes in specific subjects, with a view to enriching the subject matter itself rather than exposing pupils to a wide range of subjects, is one of the promising strategies but one that still requires more refinement and reresearch.

- The training of teachers for "highly gifted pupils" is a matter that should enjoy top priority. It is essential that there should be teachers who can recognise such pupils, design educational programmes for them, give them proper guidance and the necessary etc. (Work Committee 8 1984: 184).

Against this background the Work Committee: Special Educational Needs made the following recommendations:

(1) Directed and advanced courses (preferably in the form of a B.Ed. endorsement) should be instituted on an in-service training basis. Only selected teachers should be admitted to these courses. The courses should train candidates to recognise "highly gifted pupils" (as well as handicapped, scholastically impaired and environmentally deprived pupils), to design enrichment programmes on an individualised basis and to orient the candidates in respect of research on "highly gifted pupils".

(2) Provision of education for "highly gifted pupils" should throughout be made only within and supplementary to mainstream education. In principle the system of differentiated education provides enough scope for provision to be made (with the necessary initiative) for "highly gifted pupils", if properly trained teachers who are sensitive to the needs of these pupils are available. The following educational strategies show promise for handling gifted pupils: homogeneous grouping, acceleration, enrichment with the assistance of subject specialists at tertiary education institutions, available centres, etc. (Work Committee 8 1981: 185).

1.3.6 Recommendations of the Main Committee of the HSRC Investigation into Education

In its report, Provision of Education in the RSA, published in June 1981, the Main Committee made certain recommendations concerning the provision of education for "highly gifted pupils". These recommendations, which concur with those of the Work Committee: Special Educational Needs, are as follows:

"Specially designed advanced courses (preferably as an endorsement to a B.Ed.) should be introduced in the field of in-service training. Only selected teachers should be admitted to these courses. The aim of the courses should be to train candidates to identify "highly gifted pupils" including "highly gifted handicapped children" and those who are environmentally deprived or scholastically impaired, to design enrichment programmes on an individualised basis and to orient candidates in respect of research on "highly gifted pupils".

Education for "highly gifted pupils" should throughout be provided within and be supplementary to mainstream education (Report of the Main Committee of the HSRC Investigation into Education 1981: 157).

1.3.7 Résumé

From the foregoing account of education provision for "highly gifted pupils" it is evident that in the present system of differentiated mainstream education this special group of pupils does not receive due attention. The Main Committee of the HSRC Investigation into Education singled out the provision of education for "highly gifted pupils" as a top research priority (Brochure: Education: Research Priorities: 9-10).

1.4 OPERATIONALISATION OF RESEARCH

1.4.1 Brief

Both the Main Committee of the HSRC Investigation into Education and the Work Committee: Special Educational Needs indicated that the provision of education for "highly gifted pupils" is a matter demanding urgent attention. Identification of and education provision for such pupils, as well as teacher training, were singled out as critical research areas. The rationale for special education provision for "highly gifted pupils" can be summarised as follows:

* Although "highly gifted pupils" may make satisfactory scholastic progress in the ordinary class situation, this does not mean that their potential is developed to the full. For this to happen it is imperative that they be given subject matter that presents a challenge. If not, the development of their talents may be inhibited to the point of stagnation.

* Education systems commonly cater for individual differences between pupils through differentiation and individualisation. When one considers that special provision is made for the education of handicapped and scholastically impaired pupils, the question arises: why not for the "highly gifted pupil" as well?

* There is no doubt that the special (and specific) talents and/or abilities of "highly gifted pupils" can be fostered by means of special educational programmes and facilities. In view of the remarkable contributions that gifted people have made to society up to now, the creation of special education provision for such pupils appears justified.

* Various factors can cause "highly gifted pupils" to lose interest in both school and extramural activities. This may culminate in a negative self-image and underachievement. Special education provision could help to prevent such a confluence of adverse circumstances (Haasbroek & Jooste 1981: 16-18, as summarised in the report of the Work Committee: Special Educational Needs).

Following a submission to the Minister of National Education by Dr P.S. Meyer, Director-General of the Department of National Education, the education of "highly gifted pupils" was duly investigated. Dr Meyer's recommendations concerning the provision of education for gifted pupils, as approved by the Minister of National Education, were as follows (Correspondence File VOOR) (Translation of original submission and the paragraph numbers correspond with the original):

"4.4.1 In view of the progress made in the field of gifted child education in most developed countries in comparison with the apparently negligible progress and lack of research in this didactic field in South Africa, it is recommended that

(i) a comprehensive investigation be launched to ascertain which didactic practices are currently used to supply the needs of gifted pupils in South Africa, the nature and state of current research and the extent to which teacher training programmes cater for the phenomenon of giftedness;

(ii) the investigation should include all education departments for white and non-white pupils, extracurricular private centres for gifted pupils, and universities that train teachers (colleges of education fall under the education departments);

(iii) possible research areas be identified and defined in the course of the investigation;

(iv) a co-ordinated national policy for the education of gifted children in South Africa, including research on that subject and on the training and supply of teachers, be formulated.

"4.4.2 In view of the multicultural composition of the South African population, it is recommended that the Human Sciences Research Council should constitute a representative research panel which should include persons who attended the Fourth World Conference in Montreal (see Par. 4.1.).

"4.4.3 It is further considered desirable that the HSRC should co-ordinate research on the education of gifted children so as to minimise duplication. On the other hand, it is equally desirable that as many universities as possible should collaborate in the investigation in order that a proper sensitivity and attitude to the needs of 'highly gifted pupils' may be engendered in their faculties of education" (Translation).

The Main Committee of the HSRC Investigation into Education appointed a Work Committee: Education for "Highly Gifted Pupils" to research education for "highly gifted pupils" with due regard to Dr P.S. Meyer's submission and the recommendations in the Main Committee's own report.

The work committee interpreted its mandate thus: to investigate all matters relevant to the education of "highly gifted pupils" and to lay down appropriate guidelines for the provision of such education.

For the execution of its mandate, the work committee distinguished the following research projects, which were allocated to work groups:

(i) The present state of education for "highly gifted pupils" in the RSA

(ii) Definition of highly giftedness and "highly gifted pupils"

(iii) Identification of "highly gifted pupils"

(iv) Education for "highly gifted underachievers"

(v) School guidance for "highly gifted pupils"

(vi) Forming the attitudes of teachers, parents and pupils towards education for "highly gifted pupils"

(vii) Curriculum development for "highly gifted pupils"

(viii) Curriculum development principles for the following subjects/groups of subjects: mathematics, social sciences, languages, commercial sciences, visual and performing arts, natural sciences and technical subjects, and leadership

(ix) Education provision for leadership as a special manifestation of "highly giftedness"

(x) Selection and training of teachers for "highly gifted pupils"

(xi) Education of "highly gifted handicapped pupils"

(xii) Educational and education control structure for "highly gifted pupils

1.4.2 Research method

(1) Investigation into the present state of education for "highly gifted pupils" in the RSA

Work committee members representing the education departments were requested to furnish the committee with information on the provision of education for "highly gifted pupils" in accordance with the identified research themes. The aim was to compile a profile of the current state of education provision for "highly gifted pupils" in the RSA. (Chapter 2 of the report deals with the state of education provision for gifted pupils up to October 1983.)

(2) Study of literature

The project committees and the Institute for Educational Research undertook the investigation and compiled reports and memoranda for consideration by the work committee. The research took the form of an extensive study of the literature and, where necessary, questionnaire surveys.

(3) Work committee meetings

The research reports were discussed at committee meetings. The final report of the work committee was compiled by the Institute for Educational Research and approved by the work committee.

1.5 DEFINITION AND CATEGORISATION OF GIFTED PUPILS

Since 1950 committees investigating education in the RSA have consistently stressed individual differences between pupils as a factor to be considered by educational planners. The Committee for Differentiated Education and Guidance singled out "highly gifted pupils" as a special group for whom education had to be provided. The HSRC Investigation into Education strongly recommended that planning of education for "highly gifted pupils" be undertaken.

Notwithstanding differences in the various education departments' definition of "highly gifted pupils", they appear to be those pupils who achieve exceptional results and for whom special education provision has to be made or contrived.

For the purposes of this report it is necessary to define the terms used to qualify pupils as exceptional achievers so that subsequent chapters on aspects of the education of such pupils can be seen in proper perspective. This will give the reader a clear idea of the group of pupils under discussion.

With regard to giftedness, it must first of all be remembered that it constitutes an essential quality of the human being (child) as a person. The human being (child) is not distinct from his personal qualities (among which giftedness is a special one), but functions as a totality. The human being (child) and his qualities are in the world - and in communication with the world - as a totality. Giftedness is one mode of human Dasein (being in the world) and as such represents a way in which the person (child) attributes meaning to his world and existence. Giftedness is characterised by totality; with reference to the person it indicates a special potential. Although giftedness is a comprehensive concept, certain essential features can be identified.

In the USA, Canada, the United Kingdom and Israel the terms gifted, highly gifted, talented and specifically gifted are variously used to describe pupils who excel. Some writers use these terms interchangeably to refer to a person's ability in various fields or in a specific area. Those who treat the terms as distinct concepts see giftedness as a special potential or ability to excel in a number of fields, whereas talent or specific giftedness refers to a specific ability permitting excellence in only one field. The term talent (or talented) would appear to be largely colloquial, whereas specific giftedness is the more acceptable term for purposes of research and educational planning (Haasbroek & Jooste 1980). The following definitions of giftedness will illustrate the complexity of this human attribute.

1.5.1 Definitions of giftedness in some overseas countries, with intellectual ability as the main criterion of giftedness

Some overseas experts equate giftedness with outstanding intellectual ability. Their criterion is therefore intellectual capacity. Definitions applying this criterion are the following:

(i) Painter (1980: 25), an expert on education for gifted pupils, defines the relation between intellectual ability and giftedness thus: "An IQ of 130, is probably the one which is most commonly taken as a dividing line between intellectually gifted and non-gifted youngsters."

(ii) The state of Illinois formulated the following definition of gifted pupils: "Children whose mental development is accelerated beyond the average to the extent that they need and can profit from specially planned educational services" (information brochure).

(iii) Educationists in the state of Delaware make a distinction between the gifted and the talented. Giftedness refers to the intellectually gifted, as appears from the following definition: "Gifted children are those children between the chronological ages of 4 and 21 who are endowed by nature with high intellectual capacity. Gifted children are those children who have native capacity for high potential intellectual achievement and scholastic achievement."

(iv) The state of California stresses intellectual ability as a criterion of giftedness. A gifted child is defined as follows: "A minor enrolled in a public primary or secondary school of this state who demonstrates such general intellectual capacity as to place him within the top two per cent of all students having achieved this school grade throughout the state, or who is otherwise identified as having such general intellectual capacity but for reasons associated with cultural disadvantages has underachieved scholastically" (information brochure of the California State Department of Education).

1.5.2 Definitions of giftedness in overseas countries which use giftedness as an umbrella term for a variety of outstanding personal qualities

Experts who apply giftedness as an umbrella term to pupils who excel either in a variety of fields or in one field only, affirm that giftedness is characterised by totality. Definitions expressing this viewpoint include the following:

(i) According to an information brochure of the Department of Education of Ontario, Canada, gifted pupils are "those children who are from any linguistic, physical or mental cause unable to take advantage of the elementary or secondary school courses". This definition is remarkable in that the gifted, like the handicapped, are regarded as pupils who do not derive proper benefit from the ordinary educational system.

(ii) Joseph S. Renzulli (1978: 180-184) describes giftedness as follows: "Giftedness consists of an interaction among three basic clusters of human traits -- these clusters being above-average general abilities, high levels of task commitment, and high levels of creativity. Gifted and talented children are those possessing or capable of developing this composite set of traits and applying them to any potentially valuable area of human performance. Children who manifest or are capable of developing an interaction among the three clusters require a wide variety of educational opportunities and services that are not ordinarily provided through regular instructional programs."

(iii) The United States Office of Education (1972: 20) endorses the following definition of giftedness: "Gifted and talented children are those, identified by professionally qualified persons, who, by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their contribution to self and society. Children capable of high performance include those with demonstrated achievement and/or potential ability in any of the following areas, singly or in combination: General intellectual ability; specific academic aptitude; creative or productive thinking; leadership ability; visual and performing arts and psychomotor ability."

(iv) The USA Gifted and Talented Children's Education Act of 1978 (Section 902) defines gifted and talented pupils thus: "Gifted and talented children mean children who are identified at the pre-school, elementary, or secondary level as possessing demonstrated or potential abilities that are evidence of high performance capability in areas such as intellectual, creative, specific academic, or leadership ability, or in the performing and visual arts, and who by reason thereof, require services or activities not ordinarily provided by the school."

(v) The Montclair Public Schools (New Jersey), which implement the magnet programme, regard the gifted pupil (child) as follows: "Children may be gifted in a variety of areas or in one or two; some may be gifted in all. Whatever the area of his or her talent, the gifted child is capable of high performance in that area because of outstanding abilities. General intellectual ability, aptitude in specific academic subjects, creative or productive thinking, leadership ability, visual and performing arts and psycho-motor skills are just a few areas in which a child may be gifted and talented" (information brochure). One observes that this definition corresponds with that of the United States Office of Education.

(vi) The state of Delaware's definition of talent corresponds with that of giftedness as an umbrella term comprehending specific gifts. Talented pupils are described as "children ... who have demonstrated superior talents, aptitudes or abilities. 'Talented children' are those children who have demonstrated outstanding leadership qualities and abilities or whose performance is consistently remarkable in the mechanics, manipulative skills, the art of expression of ideas, orally or written, music, art, human relations or any other worthwhile line of human achievement" (information brochure).

1.5.3 Conclusions regarding the foregoing definitions as used in certain overseas countries

Giftedness would appear to be an umbrella term for describing the outstanding capacity for achievement of a particular group of pupils. The definitions seem to attach two meanings to the concept. One group of experts describe giftedness in terms of remarkable intellectual ability, indicating that the gifted pupil can excel in various fields.

It should be noted that although intellectually gifted pupils are recognised as gifted in the USA, the qualifying IQ (according to the Revised Wechsler Individual Intelligence Scale for Children) is 145.

A second group of experts see giftedness as a comprehensive concept embracing exceptionally high or excellent performance in either one or a variety of fields. It follows that in the school context a pupil would qualify as gifted if his performance in just one subject or school activity is consistently high or exceptional.

1.6 DEFINITION OF GIFTED PUPILS

In view of the diversity of meanings attached to giftedness in the foregoing definitions, and the problems experienced by educational planners in catering for this diversity, **it is recommended that giftedness be used as an umbrella term to describe those pupils who possess exceptional abilities to achieve outstandingly in one or more fields.***

---

* Since pupils demonstrate their exceptional abilities in various ways, it is recommended that pupils with an IQ of 130 or more who consistently achieve outstandingly in all or most subjects be defined as intellectually gifted, and that pupils who consistently achieve outstandingly in only one subject or school activity, in a few subjects or school activities, or in respect of a particular personal quality or qualities be regarded as specifically gifted.

Giftedness may therefore be defined as a remarkable potential or ability possessed by a person to achieve outstandingly in various fields or in just one field. Giftedness is an umbrella term covering all exceptional abilities and the realisation of these through outstanding achievement.

The recommended term "intellectually gifted" pupils as a description of pupils who achieve outstandingly in all school subjects incorporates the terms "gifted", "highly gifted" and "mentally highly gifted". The recommended term "specifically gifted" children as a description of pupils who achieve outstandingly in only one or a limited number of school subjects or activities incorporates the terms "specifically gifted" and "talented". (See Haasbroek and Jooste 1980: 14-16.)

42

With a view to the proper identification of gifted pupils and the provision of education for them, the definition of such pupils should allow for the different categories of giftedness. Such a definition would permit a multidimensional approach to the identification of gifted pupils.

The following definition of gifted pupils is recommended: Gifted pupils are those pupils who, by virtue of their latent or realised superior intellectual abilities and other personal potential, are capable of consistent outstanding achievement and are identifiable on the basis of such achievement.

Because of the diversity of manifestations of giftedness it is recommended that the following categories of gifted pupils be distinguished for purposes of identification and provision of education.

(a) Pupils manifesting superior general or specific intellectual potential;

(b) pupils who consistently achieve outstandingly or exceptionally in the academic or cultural sphere;

(c) pupils manifesting exceptional aptitude, interest and ability with regard to a specific academic field, to which they devote unusual attention;

(d) pupils manifesting exceptional creative potential and remarkably flexible, productive thinking demonstrated by the introduction of innovations;

(e) pupils manifesting exceptional leadership potential and influence, by virtue of which they compel the respect of their peers;

(f) pupils manifesting exceptional aptitude for and command of language as well as creative ability in this regard which could develop into a talent for prose or poetic composition;

(g) pupils manifesting exceptional aptitude for acting in, writing or producing dramatic works;

(h) pupils manifesting exceptional ability or potential in rhetoric;

(i) pupils who manifest exceptional aptitude for singing, who win singing competitions and who could, for instance, have potential as opera singers;

(j) pupils evincing exceptional musical talent which could lead to masterly performance or composition of music;

(k) pupils with superior talent, interest and rhythmic motor skills suited to interpretive art forms such as ballet and expressive dancing;

(l) pupils manifesting superior artistic talent indicating potential as masters of graphic art, modelling, ceramic art, painting, sculpture, woodcuts or pyrography;

(m) pupils manifesting superior aptitude, insight, artistic sensitivity, resourcefulness, ability and manual dexterity for the production of mechanical and other designs, constructions, models or inventions;

(n) pupils manifesting superior kinesthetic (psychomotor) abilities, including speed, strength, body control, suppleness, fleetness of foot, eye-hand co-ordination, gracefulness, ball control, together with the required personality traits to excel at sport and earn fame in this field (Gouws 1983: 128-129 - translated).

1.7 RÉSUMÉ

Although earlier committees of inquiry (1950-1970), the Committee for Differentiated Education and Guidance, the Work Committee: Special Educational Needs and the Main Committee of the HSRC Investigation into Education have identified problem areas in the provision of education for gifted pupils, it seems advisable first to explore the present situation in the RSA. This will establish to what extent the identified research areas are still applicable to the provision of education for gifted pupils.

CHAPTER 2

PROVISION OF EDUCATION FOR GIFTED PUPILS IN THE RSA UP TO OCTOBER 1983

2.1 INTRODUCTION

It should be noted that a number of organisations had offered educational opportunities for gifted pupils even before 1979, when the education departments took active steps to provide education for gifted children. At present there are various agencies, particularly parent associations, concerned with education for gifted pupils at a local and regional level. However, up to 1980 the principal providers of education for gifted pupils were the Office of the Gifted and Talented* (Port Elizabeth), the Children's Workshop (Durban), the Schmerenbeck Education Centre (Johannesburg), the Questioners' Club (Western Cape), SOWT Enrichment Courses for the Gifted (Pretoria) and the Helderbergse Vereniging vir die Begaafde Kind -- STIMULUS (Stellenbosch).

These organisations furnish parents, teachers and the community with information about the education of gifted pupils. They also offer afternoon, evening and/or weekend classes in areas not directly related to school subjects.

The education of gifted pupils is also receiving attention in the Republic of Transkei, the Republic of Ciskei and the Republic of Bophuthatswana, as well as in the national state of KwaZulu. These states send people to the Cape Education Department for in-service training courses. Some schools offer educational programmes for gifted pupils. The Department of National Education is also providing education for gifted pupils among the indigenous peoples of South West Africa/Namibia.

To form a picture of the nature and extent of education provision for gifted pupils by the various education departments, the Work Committee: Education for Gifted Pupils requested representatives of these departments serving in its ranks to provide reports and documents on the subject.

In this way information was obtained from the Transvaal Education Department (TED), the Cape Education Department (CED), the Natal Education Department (NED), the Department of National Education (DNE)**, as well as from the Division: Indian Education *** and the Directorate of Coloured Education**** of the Department for Internal

---

* Established by Mr Jock Omond in February 1976.

The present names of the various education departments are as follows:

** Department of Education and Culture: Administration: White Own Affairs
*** Department of Education and Culture, House of Delegates
**** Department of Education and Culture, House of Representatives

In this report the old designations will be used, with the new names in parentheses.

Affairs and the Department of Education and Training. The information received indicated that up to 1983 the aforementioned education departments had concerned themselves in varying degrees with the provision of education for gifted pupils.

2.2 PROVISION OF EDUCATION FOR GIFTED PUPILS BY EDUCATIONAL AUTHORITIES UP TO OCTOBER 1983

2.2.1 Transvaal Education Department

The Transvaal Education Department proceeds from the premise that local circumstances place distinctive demands on education for gifted pupils, and that the provision of education for such pupils by each education department will therefore have a distinctive character.

The TED provides educational opportunities for gifted pupils by means of extracurricular centres which are at present a top priority. The extracurricular centres in Pretoria, Johannesburg and Potchefstroom are considered by authorities in these areas to afford the most appropriate means of catering for the special educational needs of gifted pupils, namely by way of extramural teaching activities. It should be noted, however, that the TED does not regard this type of education provision as the only method of accommodating the educational needs of gifted pupils. In the department's view

(i) the education of gifted pupils should receive special attention at all times; and

(ii) the educational needs of gifted pupils should be accommodated as effectively as possible by means of

  * effective enrichment of subject matter in the classroom;

  * other school activities, such as use of the media centre and media-integrated programmes, extracurricular activities, veld schools and preparedness programmes;

  * programme expansion, that is, offering more than six subjects for Standard 10, and

  * winter schools.

2.2.2 Cape Education Department

The CED launched its programme for the provision of education for gifted pupils in two phases. During the FIRST PHASE a central committee and various programme committees were established. Extension programmes were compiled for inplementation in selected schools (project schools).

The SECOND PHASE was marked by the implementation of enriched programmes in all primary and secondary schools.

The following measures were taken with regard to the staff who were to teach gifted pupils at project (experimental) schools:

(i) At nine secondary schools an additional full-time teacher was appointed within the regulation quota. At one secondary school a temporary post (fifteen hours a week) was introduced to permit co-ordination of education for gifted pupils.

(ii) At five primary schools an additional full-time teacher was appointed within the school quota. Temporary posts (fifteen hours a week) were introduced at eight primary schools to permit co-ordination of education for gifted pupils.

(iii) All such teachers received in-service training from the Planner: Gifted Child.

(iv) All school principals and teachers of schools involved in the official project meet twice a year to discuss matters affecting the education of gifted pupils.

These schools develop programmes for gifted pupils which are forwarded to the resource centre at the headquarters of the education department, where they are made available to project (experimental) schools as well as to any other schools interested in educational programmes for gifted pupils.

In addition to the compilation of special programmes, there is ongoing experimentation with subject matter and models of examination and evaluation.

2.2.3 Natal Education Department

The Natal Education Department established a permanent committee to manage the education of gifted pupils. An advisor was appointed and 18 project schools were selected with a view to offering educational programmes for gifted pupils. The advisor, the NED Division of Academic Planning and the teachers at the experimental schools jointly compile enriched programmes for gifted pupils. The pilot project has been expanded to include more schools.

Opportunities have been created to enrich the curriculum offered in the school for the benefit of all pupils. In the junior primary phase gifted pupils are given special attention by means of group work. In the senior primary phase, where opportunities for group work are limited, bigger schools have a class group composed of gifted pupils who follow an enriched programme. In the secondary school these pupils are catered for by means of streaming or by permitting gifted pupils to take all their subjects at the higher grade and to take a seventh additional subject. The NED also runs music schools to accommodate musically gifted pupils.

At certain secondary schools the NED has introduced, on an experimental basis, short courses in such non-examination subjects as ballet, book education, artistic skills, preservation of the environment and opera. The aim of the experiment is to evaluate the effectiveness of such courses, to establish guidelines for the selection of subject matter and to determine to what extent the subject matter appeals to pupils.

The NED also permits gifted pupils to progress more rapidly from one standard to the next by means of double promotions, although this system is applied very infrequently.

2.2.4 Division of Indian Education (Department of Education and Culture: House of Delegates)

At this stage this department is not yet providing special education for gifted pupils. The system of differentiated education affords all pupils - hence the gifted as well - an opportunity to choose study directions in accordance with their ability, aptitudes and interests and thus satisfy their educational needs. At present there are five school psychologists, assisted by guidance teachers, engaged in the identification of gifted pupils. This project is still in its initial stages.

2.2.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives)

The provision of education for gifted Standard 6 and 7 pupils at five secondary schools is at present being planned.

2.2.6 Department of Education and Training

This department has launched a pilot project for the education of gifted pupils in Soweto. In addition four magnet schools have been identified where pupils follow enriched programmes in the afternoons. Further expansion of the programme is envisaged for the future.

2.2.7 Conclusion

The various education departments are not equally advanced in their provision of education for gifted pupils. The Transvaal Education Department focuses on extracurricular education provision, whereas the Cape and Natal Education Departments concentrate on enriched programmes within schools. It is therefore necessary to provide guidelines for the education of gifted pupils so that the different education departments, with due regard to their particular circumstances, can consider how to implement them.

2.3 DEFINITION OF GIFTEDNESS AND GIFTED PUPILS

2.3.1 Transvaal Education Department

No exact definition of giftedness or gifted pupils could be found in the documents provided by the TED. To some extent the comprehensive definition of what is meant by the identification of gifted pupils supplies the deficiency.

When identifying a child as a gifted pupil, a penetrating survey is conducted of such a child's ways of revealing his attitude to the world and learning, his specific personality traits and his potentialities.

2.3.2 Cape Education Department

The CED's approach to the concepts of giftedness and gifted pupils is as follows -

Gifted children manifest attributes not normally observed in ordinary pupils. These attributes render them capable of exceptional achievement. A distinction is made between the concepts "gifted", "highly gifted", "talented" and "specifically gifted". Giftedness (both "gifted" and "highly gifted") refers to the potential or ability to perform outstandingly in a variety of fields, whereas talent (both "talented" and "specifically gifted") indicates a specific ability permitting outstanding performance in one field only. In the present school context a pupil will be described as gifted if his performance in a single subject of school activity is consistently remarkable, or if his results in standardised tests indicates ability for such achievement. High intellectual capacity correlates with giftedness and talent.

According to the CED the following definition of gifted pupils is fairly commonly accepted in the RSA:

"Gifted and talented children are defined as those who possess demonstrated or potential intellectual, creative or specific academic abilities and who need differentiated educational services beyond those being provided by the regular school programme in order to realise these potentialities for self and society. A child may possess singularly or in combination these characteristics: general intellectual ability; specific academic aptitude; creative or productive thinking abilities." (From documentation provided by the CED.)

At school gifted pupils are those manifesting some of the following characteristics to a greater or lesser degree:

(i) Exceptionally high intellectual capacity and consistently outstanding achievement in some or all subjects;

(ii) exceptional linguistic proficiency and keen interest in reading and literature;

(iii) exceptional mathematical and arithmetic ability;

(iv) exceptional aptitude for and interest in science and mechanics;

(v) exceptional reasoning ability;

(vi) exceptional interest in creative activities;

(vii) exceptional leadership qualities;

(viii) exceptional powers of concentration;

(ix) exceptional powers of perseverance;

(x) advanced sense of humour;

(xi) set high standards for themselves and show considerable maturity;

(xii) prefer to work on their own;

(xiii) good human relations;

(xiv) exceptional sporting ability.

2.3.3 Natal Education Department

The NED defines gifted pupils as follows:

"They are children of all ages who excel markedly in their ability to reason, judge, invent or create. There are also those who may not be included in the above but who have exceptional talents in music, art, dancing, etc." (From documentation provided by the NED.)

2.3.4 Division of Indian Education (Department of Education and Culture: House of Delegates)

From the various definitions of giftedness, this department has concluded that ideas on giftedness and gifted pupils have broadened over the past two decades. The department regards gifted pupils as those who possess superior abilities which enable them to make an exceptional contribution to the welfare of society.

2.3.5 Conclusion

The various departments' definitions of giftedness and gifted pupils are indicative of divergent points of view. A common denominator appears to be that gifted pupils are perceived as those who manifest exceptional abilities and achievements, but the conclusion is nonetheless that there are differing viewpoints concerning the definition and categorisation of gifted pupils. Since definition and categorisation are considered basic to the identification of gifted pupils, it is essential to reach finality on these matters in order to plan effective identification procedures and education provision for the gifted.

2.4 IDENTIFICATION OF GIFTED PUPILS

2.4.1 Transvaal Education Department

In identification an attempt is made to distinguish between generally and specifically gifted pupils. The intellectual capacity and/or scholastic achievement of pupils are not the sole criteria used for identifying. There are three phases in the identification procedure:

(1) First phase: provisional identification of giftedness by the teacher

The teacher evaluates pupils by means of a questionnaire designed to identify personal qualities indicative of giftedness. Scholastic achievement serves as a further identificatory criterion. As a supplementary source of information, the peer group's evaluation of pupils is considered by the teacher when identifying possibly gifted pupils.

(2) Second phase: identification of giftedness by a panel of evaluators

In this phase a panel of evaluators conducts the identification of the gifted pupil. Such a panel comprises the school principal, deputy principal, the head of the department of educational guidance, subject teachers, class/tutor teachers, guidance teachers and a representative of the Educational Auxiliary Service.

Before this phase of the identification procedure begins, the pupils' intelligence is investigated and a questionnaire is completed by parents. It is envisaged that standardised scholastic tests will eventually be incorporated into the procedure.

The task of the panel of evaluators is to interpret all the available information about a pupil, which would include the following: intellectual capacity, scholastic performance, performance in curricular and extracurricular activities, teachers' evaluation, evaluation by the peer group, parents' evaluation and specific personality traits of the pupil.

This phase provides an opportunity to compare a pupil with other pupils at the same school and thus to draw up a rank order of gifted pupils. The particulars of pupils rated as gifted during this phase are recorded in detail in rank order or prescribed forms which are forwarded to the Educational Auxiliary Service for the final phase of identification.

(3) Third phase: final selection of gifted pupils

The Educational Auxiliary Service evaluates the gifted pupils identified by schools during the second phase of the procedure. Pupils are compared not only with others from their own school, but with pupils from all over the province. The same criteria applied during the second phase are used again to draw up a rank order of all gifted pupils. Depending on the pupils' specific interests and choice of study directions, their scholastic achievement in certain subjects receive special attention. A final list of names, stating the relevant study direction, is prepared and submitted for approval.

(4) Gifted underachievers

These pupils are identified on the basis of certain manifestations in conjuction with standardised psychometric media.

2.4.2 Cape Education Department

An important consideration with regard to the identification of gifted pupils is that giftedness and/or specific giftedness have to be discovered as a potential. It is critically important that gifted pupils be identified early - during the preschool phase if possible, since gifted pupils are identifiable at any stage of their school career.

The Cape Education Department regards a panel of evaluators as essential for the identification of gifted pupils because of the magnitude of the task of interpreting and evaluating the relevant data. Such a panel could include the following persons: the school principal as convenor, deputy principals, the school inspector, the remedial teacher, the school psychologist and possibly other experts as well.

(1) First phase: sifting of gifted pupils by a panel of evaluators

The purpose of this sifting is to identify all potentially gifted pupils with a view to subsequent intensive individual identification. A personal profile of every gifted pupil is compiled on the basis of group achievement media (tests), group intelligence tests, performance in school subjects and data from questionnaires completed by parents and teachers (preprimary, class or subject teachers). Identification is conducted at preprimary, primary and secondary schools. Should a pupil manifest sufficient signs of giftedness, he is referred for intensive identification.

A particular pupil, however gifted, will not necessarily manifest all the relevant attributes of giftedness. Any pupil displaying some of these attributes should be regarded as potentially gifted. Some pupils are patently gifted and readily identifiable, but in other cases there is no single or simple method of identification. For the latter category the correct procedure is to keep an ongoing pedogram of every pupil.

(2) Second phase: intensive identification of gifted pupils

Since the exceptional abilities of gifted pupils are manifested in different ways, specific criteria have been devised to determine the nature of their gifts and particularly the way in which they are actualised. With the aid of such criteria the following categories of giftedness have been identified: intellectual giftedness; outstanding linguistic ability; exceptional creative ability; outstanding musical ability; outstanding artistic ability; outstanding talent for expressive dancing; outstanding dramatic ability; outstanding literary ability; outstanding capacity for leadership and outstanding talent for human relations.

Pupils identified by means of these criteria undergo standardised psychometric tests (individual intelligence tests, aptitude and achievement tests, etc.) so that information on their abilities can be gleaned. On the basis of test results and information from questionnaires, the school psychologist compiles a detailed report (containing the findings on every potential gifted pupil as well as his recommendations), which is submitted to the panel of evaluators. The panel then decides which pupils are gifted.

(3) Identification of gifted underachievers

Gifted underachievers are identified by means of standardised psychometric media. The latter include intelligence tests, aptitude tests, interest questionnaires and scholastic performance tests.

The principal criterion for the identification of gifted underachievers appears to be intellectual capacity, specifically as measured by individual intelligence tests. However, these pupils also manifest certain personality traits that can be used as identificatory criteria.

2.4.3 Natal Education Department

For purposes of identification of gifted pupils, a teacher who surmises that a particular pupil is gifted has to complete the form entitled: Evaluation of exceptional abilities. Should the teacher's surmise prove correct, this form is placed in the gifted pupil's file.

Two teachers have to return a rating of giftedness in respect of a pupil before he can definitely be categorised as gifted. The school principal may, however, decide against including such a pupil in programmes for gifted pupils if he considers non-inclusion to be in the pupil's interests.

When a pupil appears to be gifted and therefore in need of special education provision, the case is brought to the attention of the advisor for gifted pupils. Every school keeps a register of all pupils in respect of whom identification forms have been completed. The register includes the information on which the identification was based, as well as the names of the teachers who identified the pupil.

At appointed times each year the school principal submits to the advisor for gifted pupils the names of all pupils who were provisionally or definitely identified as gifted.

2.4.4 Division of Indian Education (Department of Education and Culture: House of Delegates)

Gifted pupils are identified on the basis of standardised psychometric media, parents' observation data and evaluation by teachers. Indicators of giftedness include exceptional scholastic achievement, creative ability, being a prefect, participation in extracurricular activities, superiority in Mathematics and languages and high intellectual capacity (stanines of 8 and 9).

2.4.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives)

Education for gifted pupils is being planned and education is provided for specifically gifted pupils. It is therefore assumed that the identification of gifted pupils is receiving attention.

2.4.6 Department of Education and Training

Gifted pupils are identified with the help of the department's psychological services.

2.4.7 Conclusion

The Transvaal and Cape Education Departments appear to have specific procedures for the identification of gifted pupils. Both departments apply an initial screening process to identify potentially gifted pupils, followed by special identification procedures involving a panel of evaluators who select gifted pupils for participation in special educational programmes. Although the Natal Education Department's identification procedures are less comprehensive, they recognise the main criteria. The same applies to the Division of Indian Education (Department of Education and Culture: Administration: Indian Own Affairs) and the Department of Education and Training. What emerges is that there are differing views on the identification of gifted pupils and that intellectual capacity as determined by intelligence tests is not the sole criterion in the identification of giftedness.

In view of the divergent procedures and criteria used to identify gifted pupils, guidelines in this regard are considered essential for the effective identification of gifted pupils.

2.5 EDUCATIONAL PROGRAMMES FOR GIFTED PUPILS

2.5.1 Transvaal Education Department

Special programmes are designed for extracurricular centres for gifted pupils.

In the senior primary phase a programme committee selects certain themes from the following nine subjects to present to such pupils: English (First Language) or Afrikaans (First Language), Biblical Studies, History, Geography, Science, Mathematics, Music, Art and Drama. The programmes devised are aimed at enrichment.

In the junior secondary phase gifted pupils can choose between two groups of subjects. A subject is selected from each group and the pupil receives one hour of instruction in each subject every week. The subjects in Group A are political and philosophical studies, language and literature study in Afrikaans and English, the creative and performing arts (music, drama, visual arts) and communication science. Group B subjects are in the fields of information science (computer studies), electronics, astronomy and geological and petrochemical studies.

In the senior secondary phase pupils are expected to choose only one subject from each group, whereupon they receive two hours' tuition weekly in the subject of their choice.

2.5.2 Cape Education Department

Since the Cape Education Department provides education for gifted pupils within its regular schools, special enrichment programmes are devised for these pupils. Programmes in various subjects are drawn up by special programme committees, each with its own chairman. Programmes of this nature have been compiled on a wide range of topics from different subjects.

2.5.3 Natal Education Department

Enrichment programmes are compiled under the guidance of the advisor for gifted pupils. The NED also intends to establish a resource centre of enrichment material which will be available to teachers.

2.5.4 Division of Indian Education (Department of Education and Culture: House of Delegates)

Enrichment programmes have been devised to cater for the educational needs of gifted pupils in the following ways:

(i) Specific objectives are set in terms of which meaningful, challenging subject matter is selected.

(ii) Subject matter is upgraded and special courses are designed.

(iii) Activities relating to subject matter are planned in such a way as to present a challenge to pupils.

The presentation of enrichment programmes takes various forms:

(i) Pupils receive ordinary instruction, either individually or in a group context, and are encouraged to read widely.

(ii) Ordinary teaching programmes are presented with some extra work, such as an additional subject.

(iii) Pull-out groups are formed in which pupils study the basic school subjects more intensively.

(iv) Teaching hours are extended to permit the organisation of extracurricular activities for the extension of gifted pupils' knowledge.

Provision is also made for gifted pupils to take part in extracurricular activities and projects in the community.

2.5.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives)

Enrichment programmes are being developed in Mathematics, English (First Language) and Geography. For pupils gifted in music, ballet, art, speech and drama there are special programmes in selected schools. Pupils gifted in technical fields also receive special education. The Subject Advisory Service (junior primary) advises teachers on how to integrate enrichment programmes into junior primary education.

2.5.6 Department of Education and Training

Enrichment programmes in English, Mathematics, Physical Science and Chemistry are offered on Saturdays.

2.5.7 Conclusion

As in the case of other aspects of gifted child education, the various departments appear to use differing methods of programme design for gifted pupils. Since programme design is one of the more important components in the provision of education for gifted pupils, guidelines will obviously have to be laid down.

2.6 EDUCATIONAL FACILITIES FOR GIFTED PUPILS

2.6.1 Transvaal Education Department

In addition to enriched subject matter, accelerated education, special magnet schools for pupils with a marked aptitude for art, ballet and music, computer science as an examination subject and programme extension (additional subjects), the TED also offers special educational programmes at its extracurricular centres for gifted pupils.

These three extracurricular centres have been established in Pretoria, Johannesburg and Potchefstroom because

* they are situated in densely populated areas and can therefore cater for large numbers of gifted pupils;
* highly qualified staff at institutions such as universities and colleges of education are available on a part-time basis to teach gifted pupils;
* the necessary physical facilities are available at the three colleges of education where the centres are located;
* they do not entail high additional financial costs.

The establishment of extracurricular centres in other parts of the Transvaal is being considered.

(1) Centre staff

Each centre has a head assisted by administrative staff. Teaching staff is drawn from the local universities and colleges of education.

(2) Classification and grouping of centre pupils

The selected gifted pupils and their parents are invited to attend an orientation meeting. Classes and groups are determined on the basis of study directions. Ten pupils per class is considered ideal. Gifted pupils in the senior primary classes are accommodated separately according to their home language (English or Afrikaans). The same procedure is followed for gifted pupils in the secondary classes, except that English and Afrikaans medium groups can be combined where pupil numbers do not justify separate groups.

(3) Physical amenities

In addition to excursions and visits to institutions, subject programmes include film and slide shows, video and television programmes and various types of practical work. The latter naturally requires equipment. Venues and equipment vary from one centre to the next since each centre is dependent on the venue provided by the relevant college of education. Availability of funds determines the amount of equipment that can be purchased for the centres.

2.6.2 Cape Education Department

It was mentioned previously that certain Cape schools were selected to experiment with various methods of implementing special educational programmes. Initially 12 primary and 11 secondary schools were involved in the project. These schools make use of existing school facilities. Since then special programmes have been extended to some other schools as well.

The inspector of education is required to keep a list of names of pupils receiving accelerated education. Every year after classification he has to report to the education department on the progress of these pupils.

2.6.3 Natal Education Department

Existing school facilities in Natal departmental schools are used for the provision of education for gifted pupils.

2.6.4 Division of Indian Education (Department of Education and Culture: House of Delegates)

At present this department has no special educational facilities for gifted pupils. However, differentiated educational programmes give teaching staff scope to accommodate these pupils' educational needs using existing facilities at schools.

2.6.5 Conclusion

From the foregoing it is evident that the institutions involved in the education of gifted pupils experience problems with regard to educational facilities. Although their needs in this regard appear to differ, solutions to the problems must be found.

2.7 SELECTION AND TRAINING OF TEACHERS EMPLOYED BY EDUCATION DEPARTMENTS FOR THE EDUCATION OF GIFTED PUPILS

2.7.1 Transvaal Education Department

(1) Selection of teachers/lecturers for the education of gifted pupils at extracurricular centres

Teaching staff at extracurricular centres are carefully selected: they have to satisfy special requirements and possess special qualifications. The procedures for selection and appointment are as follows:

(i) The head of the centre determines the requirements and consults inspectors of education and senior college and university staff to obtain names of potentially suitable teachers in a given subject.

(ii) The head of the centre contacts interested candidates and submits the names to the principal of the college of education for his approval. The principal in turn submits the names to the education department.

(iii) Names of teachers are then submitted to a selection committee, which makes certain recommendations before submitting the list to the Selection Committee: Inspectorate and Auxiliary Services.

(iv) The recommendations are submitted to the director of education for a final decision.

(2) Training of teachers for gifted pupils

No information is available on the specific training of teachers for gifted pupils. However, centre staff are well informed about the education these pupils require.

2.7.2 Cape Education Department

Since the CED provides education for gifted pupils at ordinary primary and secondary schools, these pupils' education is conducted by the regular teaching staff. However, special training of teachers involved in the education of gifted pupils is provided in the following ways:

(1) In-service training of additional teachers appointed

Additional teachers appointed for the education of gifted pupils are trained for this task through in-service training programmes offered by the educational planner. In addition, in-service training courses for primary school teachers and for the principals and staff of secondary schools are offered twice a year.

(2) Orientational teacher training courses on education for gifted pupils

During the first phase of the project on education for gifted pupils, programme design committees compiled programmes for teacher training which are currently offered to students at colleges of education in the form of compulsory subject modules. The aim of these training programmes is to orient students in respect of education for pupils.

(3) Teacher training: Education for gifted pupils

Since January 1983 a training programme, the Higher Education Diploma (Senior Primary) in Didactics (The Gifted Child), has been offered to specially selected students at colleges of education.

Since there are gifted pupils at every school, is is essential that teaching students receive intensive training to enable them to cater for these pupils' educational needs. The aim is to train teaching students in the identification of gifted pupils in the organisation and planning of education for gifted pupils, as well as in programme design and guidance for these pupils.

(4) Selection of students and practising teachers for the Higher Education Diploma (Senior Primary) in Didactics (The Gifted Child)

Students who obtain a first-class pass in their third year may be selected for the course on education for gifted pupils. The principal of a college may also recommend other students for the course. Applications from selected students and from practising teachers desirous of following the course are then dealt with by the Educational Planner: The Gifted Child.

The criteria for selection include the maturity, powers of comprehension, perseverance, interest in education for gifted pupils as well as the academic and professional achievements of candidates.

2.7.3 Natal Education Department

Like the CED, the NED provides for the education of gifted pupils within the context of ordinary primary and secondary schools.

(1) In-service training of teachers

In-service training courses are offered to enhance and expand practising teachers' knowledge concerning identification procedures, composition of teachers groups, programme design and guidance procedures.

(2) Training of teaching students

The second-year course at the Edgewood College of Education includes an introduction to the subject of giftedness, and in the fourth year giftedness and intellectual capacity are studied in depth. Students also undertake a two-term planning project for a particular gifted pupil in a specific standard.

In the third-year course of the Natal Training College (Pietermaritzburg) gifted pupils, cognitive development, creative ability, evaluation of intellectual capacity and the development of educational programmes for gifted pupils are dealt with. The course concludes with an intensive study of the types of enrichment programmes for gifted pupils preferred by the NED.

The Durbanse Onderwyskollege does not offer specific training programmes or courses on education for gifted pupils, but its course on psychopedagogics contains frequent references to the subject:

* Second-year students: Giftedness is discussed in the section dealing with the intellectual development of primary school pupils.

- Third-year students: Here giftedness is discussed in the section on successful learning, more specifically in the subsection on subjective conditions for successful learning.

- Fourth-year students: This course concerns the psychic life of the pupil in education - gifted pupils are discussed in the section on the guidance of primary and secondary school pupils in the school situation. The work takes the form of assignments to be completed by the students.

The Department of Education Studies of the College of Education for Further Training offers a course in education for gifted pupils, constituting approximately one-sixth of the overall course (Education Studies 2 of the Higher Diploma in Education). This course comprises information on the following key components:

(i) Case studies of persons manifesting exceptional abilities.

(ii) Talented and exceptional pupils.

(iii) Intellectual and creative ability.

(iv) Identification of pupils with exceptional abilities.

(v) Education of talented and exceptional pupils and development of exceptional abilities.

2.7.4 Division of Indian Education (Department of Education and Culture: House of Delegates)

It is this department's view that education for gifted pupils makes heavy demands on teachers who need to be thoroughly trained, keen to learn, enthusiastic, patient and long suffering. They should be able to inspire their pupils and plan programmes with due regard to the educational needs of the pupils. They should afford gifted pupils the opportunity to explore their fields of interest. Honesty and a positive attitude towards education for gifted pupils are important attributes and only teachers possessing these attributes should be considered for training. The selected teachers should have teaching experience and should complete further courses in education for gifted pupils.

2.7.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives)

Gifted child education as a field of study forms part of the new syllabus for pedagogics and its introduction as an optional subject at colleges of education is being considered.

2.7.6 Department of Education and Training

Gifted pupils are taught by specially selected teachers.

2.7.7 Conclusion

From the information received on the selection and training of

60

teachers for gifted pupils, it seems that some education departments are doing pioneering work in this field. It also appears that those departments that implement selection procedures and offer training are experiencing problems in the process. In view of the fact that in some education departments the provision of education for gifted pupils is at present in the planning stage, it is essential that guidelines be provided for the selection and training of teachers for these pupils.

2.8 EDUCATION FOR GIFTED HANDICAPPED PUPILS

The Department of Education and Culture: Administration: White Own Affairs submitted no information on the education of gifted handicapped pupils. In the course of the meetings of the work committee it was stated that the system of differentiated education, with its study directions at the higher and standard grades, did in fact afford gifted pupils an opportunity to realise their potential to a considerable extent. It is therefore inferred that no special provision is made for the education of gifted handicapped pupils, which makes it necessary to lay down guidelines for the education of these pupils.

2.9 EDUCATION FOR GIFTED UNDERACHIEVERS

The documentation available to the work committee gave no indication of any special education provision for gifted underachievers, although the TED, CED and NED indicated that these pupils did receive attention during the course of identification of gifted pupils.

The literature states unequivocally that underachievement among gifted pupils is a common phenomenon which in all probability leads to a loss of high-level manpower. In view of this, it is of cardinal importance that research into the education of gifted underachievers be undertaken so that guidelines can be laid down.

2.10 COUNSELLING OF GIFTED PUPILS AND THEIR PARENTS

2.10.1 Transvaal Education Department

The TED feels that the education of gifted pupils should be a team effort and that education authorities should devise ways of involving parents in the exercise. Particularly in areas where pupils are unable to attend the extracurricular centres, the TED counsels parents on the development of their children's exceptional abilities. Guidance is given to gifted pupils as part of the regular guidance activities at schools.

2.10.2 Cape Education Department

According to the CED, during the first phase of its education provision for gifted pupils over a hundred schools and related institutions and groups were informed about the existence of gifted pupils and their distinctive needs. Awareness of the necessity of education for gifted pupils is growing steadily among teaching staff and the public at large. Guidance for gifted pupils is part of the regular guidance activities at schools.

2.10.3 Natal Education Department

No information is available on guidance for either gifted pupils or their parents, although it may be assumed that guidance for such pupils forms part of the regular guidance activities at schools.

2.10.4 Division of Indian Education (Department of Education and Culture: House of Delegates)

No information is available on guidance for either gifted pupils or their parents, although it may be assumed that guidance for such pupils forms part of the regular guidance activities at schools.

2.10.5 Directorate of Coloured Education (Department of Education and Culture: House of Representatives)

No information is available on guidance for either gifted pupils or their parents, although it may be assumed that guidance for such pupils forms part of the regular guidance activities at schools.

2.10.6 Conclusion

There appears to be deficiencies regarding counselling services for gifted pupils and their parents. It is essential that research be undertaken into guidance for gifted pupils and their parents as well as into the formation of correct attitudes towards gifted pupils.

2.11 RÉSUMÉ

2.11.1 Provision of education for gifted pupils

With regard to the provision of education, three education departments cater formally for the needs of gifted pupils. The Transvaal Education Department provides for such pupils by way of extracurricular centres, while the Cape and Natal education departments do so in a decentralised way within their ordinary primary and secondary schools. Although the other education departments make provision for the education of gifted pupils, the provision can be regarded as still in the planning phase.

2.11.2 Definition and categorisation of gifted pupils

Although the various education departments have different definitions of giftedness, it would seem that pupils with exceptional ability and achievements are singled out as a group with special educational needs.

2.11.3 Identification of gifted pupils

The Transvaal and the Cape education departments in particular have definite procedures for the identification of gifted pupils. Both departments seek first to identify possibly gifted pupils and then to expose them to intensive evaluation to identify candidates for participation in special educational programmes.

The identification procedures of the Natal Education Department, the Division of Indian Education (Department of Education and Culture: Administration, Indian Own Affairs) and the Department of Education and Training are less comprehensive, while those of the other departments are still in the planning stage.

2.11.4 Design of programmes for gifted pupils

The education departments of the Transvaal, the Cape and Natal compile special enrichment programmes for gifted pupils, as do the Division of Indian Education (Department of Education and Culture: Administration: Indian Own Affairs), the Directorate of Coloured Education (Department of Education and Culture: House of Representatives) and the Department of Education and Training. However, the methods of programme design vary considerably, necessitating the provision of guidelines in this regard.

2.11.5 Educational facilities for gifted pupils

The Transvaal Education Department uses the facilities of its colleges of education, while the education departments of the Cape and Natal, the Division of Indian Education (Department of Education and Culture: Administration: Indian own Affairs) and the Directorate of Coloured Education (Department of Education and Culture: House of Representatives) offer education for gifted pupils at ordinary schools - they thus make use of existing facilities.

2.11.6 Selection and training of teachers for gifted pupils

The education departments of the Cape and the Transvaal carefully select staff for the education of gifted pupils. The Natal Education Department selects not only the teachers for gifted pupils but also the students who will take courses in gifted child education. The Division of Indian Education (Department of Education and Culture: Administration: Indian Own Affairs) is in favour of selecting teachers for gifted pupils, while the Department of Education and Training also selects teachers specially for the task of educating these pupils.

With regard to the training of teachers for gifted pupils, the education departments of the Cape, Natal and the Transvaal provide intensive in-service training and/or training at colleges of education. The Division of Indian Education is also in favour of formal training for teachers of gifted pupils.

2.11.7 Education for gifted handicapped pupils and gifted underachievers

No special provision is made for education for gifted handicapped pupils. To a large extent they can realise their potential within the prevailing system of differentiated education.

Although the education departments of the Cape and the Transvaal identify gifted underachievers, no special provision is made for their education.

It is clear that the provision of education for gifted handicapped pupils and gifted underachievers requires attention.

2.11.8 School guidance for gifted pupils

There appears to be deficiencies with regard to special counselling services for gifted pupils and their parents, although these pupils participate in the ordinary guidance activities at their schools.

2.12 CONCLUDING REMARK

From the foregoing conclusions concerning the provision of education for gifted pupils, the identified research areas appear justified with a view to laying down guidelines for the future education of these pupils.

CHAPTER 3

IDENTIFICATION OF GIFTED PUPILS

3.1 INTRODUCTION

Up until a few decades ago, the methods for identifying gifted pupils were rarely matters of controversy. The narrow, one-sided view of giftedness prevalent at the time, particularly in the USA, made identification simple. Giftedness was usually equated with high intellectual capacity. According to Renzulli and Stoddard (1980: 2), Terman was able to furnish the following facile answer to the question as to who gifted pupils were and how they should be identified: "... the top one percent level in general intellectual ability, as measured by the Stanford Binet Intelligence Scale". Terman's work (Barbe and Renzulli 1981: 5-9) indicates the great importance he attached to IQ as a criterion for the identification of gifted pupils.

Nowadays many researchers have objections to the equation of giftedness with high intellectual capacity and specifically high IQ as measured by commonly known intelligence tests. Thus Renzulli and Stoddard (1980: 2) point out that when high IQ is taken as the sole criterion for identification of gifted pupils, special educational programmes for such pupils appear to have little efficacy. This may be attributable to an excessively one-sided interpretation of the nature of giftedness. Hildreth (1966: 147), Gowan and Bruch (1971: 11), Milgram, Milgram and Landau (1974: 1), Gowan and Torrance (1977: 149) and Khatena (1982: 65) all agree that IQ should not be used as the only criterion for the identification of gifted pupils. In fact Gowan and Torrance (1977: 149) regard the broader approach to the nature of giftedness that has emerged over the past decades as the most significant development in this area.

Gowan and Bruch (1971: 11), Parkyn (Gibson and Chennells 1976: 50) and Khatena (1982: 65) maintain that criteria other than intellectual capacity should be taken into account when identifying gifted pupils. Thus creative and productive thinkers, outstanding achievers in school subjects, and pupils displaying exceptional leadership qualities, psychomotor ability and ability in the visual and performing arts should also be identified. Parkyn (Gibson and Chennells 1976: 50) goes even further: "... we must now put more value upon certain kinds of giftedness which in the past we have tended to neglect, namely divergent originality in rational-scientific thinking about man and the universe, perceptive and sensitive aesthetic appreciation of the nature of man and the universe, and empathic awareness of the relationship of man and other inhabitants of this universe."

Hildreth (1966: 146-147) believes that identification of gifted pupils should be based largely on manifold observations and the use of various media by several investigators over an uninterrupted period. In this author's opinion there are considerable parallels between identification procedures and diagnostic procedures in which a variety of techniques are used to obtain relevant information about pupils. The ideal is evidently a comprehensive study of the pupil's entire development, starting with early childhood and including his entire school career. Martinson (1978: 16) and Pack (Miller and Price 1981: 39) both subscribe to this view, the latter maintaining further that the evaluation of gifted pupils actually implies an in-depth study of their unique style of behaviour. Haasbroek and Jooste (1981: 24-25) effectively sum up the various trends in the identification of gifted pupils by postulating the need for a personal profile. The aim of such an evaluation would be to appraise pupils in their totality with regard to ability in order to determine whether they are gifted or not.

One may conclude that over the past decades there has been a significantly broader approach to the identification of gifted pupils. Formerly the identification procedure was expected merely to single out pupils with exceptional intellectual capacity. Today many researchers believe (as will be shown in due course) that whereas intellectual capacity should still occupy a prominent place in identification procedures, it should not be the sole criterion - that other manifestations of giftedness should also be taken into account.

3.2 REQUIREMENTS FOR AN IDENTIFICATION PROCEDURE

According to the literature, there are several important requirements for identification procedures.

3.2.1 Relation between the definition and categorisation of gifted pupils and their identification

It is fairly obvious that the definition and categorisation of gifted pupils will have a direct bearing on their identification. Many researchers, including Gowan and Demos (1964: 270), Gallagher (1975: 16), Martinson (1978: 6) and Hagen (1980: 6-7), refer to the close interaction between the two processes. The fact is that definition and categorisation of giftedness provide the identifying agency with the necessary frame of reference. Presumably this is why the HSRC Work Committee: Education for "Highly Gifted Pupils" decided in September 1982 that the definition of giftedness should constitute the starting point for the identification procedure.

For the purposes of this report the definition and categorisation of giftedness expounded in Chapter 1 will constitute the starting point for identification.

3.2.2 Effectiveness of the identification procedure

The procedure and models applied should be such that only truly gifted pupils as defined and categorised will be identified. Researchers such as Blosser (quoted by Gowan and Demos 1964: 275-276) and Pegnato and Birch (Barbe and Renzulli 1975: 248-255) point out that identification procedures do not always achieve their aims. One of the aims of effective identification would be to disclose all information pertinent to an understanding of the gifted pupil's unique individual educational needs. Such knowledge is vital with a view to the effective provision of education for these pupils. One therefore concludes that the identification procedure should clarify as many facets of the individual gifted pupil as possible, indicating a multidimensional approach. The aforementioned objectives can all be attained by making an overall personal profile the premise for identification.

Identification procedures should not entail an unrealistically heavy extra work load for teaching staff, since this could result in negative attitudes. The formation of such attitudes is to be avoided at all costs, since it could sabotage the entire project of education for gifted pupils.

3.2.3 Identification of culturally dissimilar gifted pupils

According to Duminy (1963: 75-77), Gallagher (1975: 367-386), Tongue and Sperling (1976: 9-11), Painter (1980: 4-5) and Thunberg (Miller and Price 1981: 51), the way giftedness manifests itself is influenced by membership of a particular cultural group. It often happens, however, that the media used in identification are not sufficiently sophisticated to identify culturally dissimilar gifted pupils. Gowan and Bruch (1971: 77), Gallagher (1975: 371, 385), Lyon (Gibson and Chennells 1976: 23), Newland (1976: 201), Martinson (1978: 108-115) and Harrington (1982: 114-115) all mention that intelligence tests in particular discriminate against culturally dissimilar gifted pupils, frequently resulting in their exclusion from educational programmes for gifted pupils. This fact should be borne in mind in the identification procedure.

Another important point is that it cannot simply be assumed that all pupils from the same cultural group will necessarily be culturally homogeneous. Many researchers maintain that within an apparently homogeneous cultural group there may be considerable diversity in cultural background. Bonsall and Stefflre (Gallagher 1966: 77-79), Hildreth (1966: 102-103), Roos (1970: 31) (with reference to intellectually superior pupils), Gowan and Bruch (1971: 76-77), Newland (1976: 48-50), Painter (1980: 6-8) and Thunberg (Miller & Price 1981: 50) refer to such influences as home environment and socio-economic circumstances on the manifestation of giftedness. It should be noted, however, that it is not impossible for gifted pupils to come from a negative home environment. In such cases too psychometric media will not necessarily provide an accurate picture of the attributes and abilities of gifted pupils, and this should be borne in mind in the identification procedure. Thomas and Crescimbeni (1966: 21), Gallagher (1975: 367-369) and Painter (1980: 12-13) mention the peer group as a factor in the way giftedness is manifested: peer group pressure could cause gifted pupils to manifest their giftedness in divergent, possibly unconventional ways.

What is important from the point of view of identification is that manifestations of giftedness are influenced not just by the broad community from which the gifted pupil comes but also by his immediate circle or small group. Identification procedures and models for identification should therefore be sufficiently flexible and adaptable to cater for culturally dissimilar pupils as well.

3.2.4 Identification of gifted underachievers

Underachievement has serious implications for optimal, positive personality development, optimal positive development of learning characteristics and for the high-level manpower situation in the RSA. In view of this it is essential that identification procedures should not merely single out the gifted underachiever, but should provide information about him with a view to therapeutic assistance, remedial education and inclusion in the special education provided for gifted pupils.

3.2.5 Early identification of gifted pupils

Researchers such as Anderson (Torrance 1960: 27-28), Martinson and Lessinger (Gallagher 1966: 28), Vernon, Adamson and Vernon (1977: 100-101), Frasier (Jordan and Grossi 1980: 48), Haasbroek en Jooste (1981: 19-20), Terman (Barbe and Renzulli 1981: 12) and Mönks (1983: 206) are all convinced of the importance of early identification of gifted pupils. From the literature it would seem that gifted pupils should be identified no later than their fourth year at school, and for various reasons earlier identification - possibly even at preprimary level - is highly desirable. Obviously failure to identify a gifted pupil at an early stage can be remedied later on. However, early identification is important, particularly in the case of gifted underachievers and culturally dissimilar gifted pupils.

3.2.6 Continuous evaluation of gifted pupils

The identification of a gifted pupil should not represent a single, incidental intervention in his life. This view is supported by Hildreth (1966: 170), Vernon, Adamson and Vernon (1977: 116-117) and Martinson (1978: 2), who also maintain that identification should be an ongoing process over a period of time, for instance, imperfect media used in identification could mean that certain gifted pupils are overlooked at the initial screening. Hence Vernon, Adamson and Vernon (1977: 116) believe that promising pupils who fail to satisfy all criteria for giftedness should be re-evaluated at a later stage. De Haan and Havighurst (quoted by Vernon, Adamson and Vernon 1977: 116) claim that gifted pupils from minority groups or in rural areas, gifted girls and gifted children of parents from low-status occupations are often overlooked. This points to an important conclusion: attempts at identifying gifted pupils among a given group of pupils will not necessarily single out EVERY such pupil in that group, implying that further attempts at identification should be made.

The fallibility of identification criteria and media moreover means that certain pupils may be erroneously identified as gifted. Vernon, Adamson and Vernon (1977: 116) maintain that this is inevitable, and consequently Hagen (1980: 4) and O'Neill and Scollay (1983: 12) consider it necessary for identified gifted pupils to be re-evaluated.

Another important point is that identified gifted pupils do not necessarily progress satisfactorily or adequately with their special educational programmes. This may be caused by such factors as health problems, insufficient support at home, diminished motivation and changes in the pupil's attitude (for example, as a result of

68

adolescence). It is important, therefore, that the gifted pupil's progress in his special educational programmes be carefully monitored. Vernon, Adamson and Vernon (1977: 116) and O'Neill and Scollay (1983: 12) maintain that pupils who do not progress satisfactorily should be withdrawn from these special educational programmes, although such withdrawal should obviously be conducted sympathetically and expertly. A possible solution to the problem is Renzulli's "revolving door" concept (Renzulli 1980: 5-6; Renzulli, Reis and Smith 1981), according to which gifted pupils move into and out of special educational programmes depending on their needs.

3.2.7 Responsible interpretation of results of media used in the identification procedure

Identification is not primarily a matter of "measuring" functions, capacities and abilities. Haasbroek and Jooste (1981: 20) conclude that every pupil proclaims himself in a distinctive way, and the gifted pupil's distinctive way of constituting his world is in fact what the researcher should evaluate. For this reason it is essential that the researcher should not slip into a purely mechanical application of media with the emphasis on quantifiable test results. It is equally important that the evaluators should not lose sight of the child as a maturing educand. The temptation to do so is strong, since purely quantitative test results often present an easy and convenient means of "identification".

Another important consideration is that even the finest media used in identification procedures have significant fundamental limitations. Often they lack reliability and validity. Another weakness pointed out by Van Niekerk (1978: 13) is that measurement and testing do not come to grips with the core of the personality but remain on the periphery. This latter view may be somewhat extreme, yet it should be noted since it would seem that the abilities and characteristics of gifted pupils are not readily assessable. The results of any media employed in identification are therefore meaningful only to the extent that they are carefully and expertly interpreted, with due regard to their qualitative nature. This view is supported by such researchers as Duminy (1963: 42-45) and Hagen (1980: 46).

3.2.8 Uniqueness of the individual gifted pupil

Terman (as quoted by Gowan in Stanley, George and Solano 1977: 13) points out that gifted individuals are not homogeneous in the attributes they display but differ in a multitude of ways. The uniqueness of the individual gifted pupil is referred to by many researchers, including Wallace (1982: 3), De Kock (1983: 95) and Monteith (1984: 2). Haasbroek and Jooste (1981: 20) also subscribe to this view, maintaining that gifted pupils differ in respect of ability, level and ways of actualising ability and participation in extracurricular, classroom and school activities. As already stated, these researchers conclude that every pupil proclaims himself in a distinctive, individual way.

This uniqueness of each individual gifted pupil should be borne in mind during identification. The procedures should therefore include various media and criteria in order to reveal as many manifestations of giftedness as possible. The same consideration applies to the provision of special education. In view of the diversity of gifted pupils' attributes, educational programmes should be tailored to the unique needs of each individual.

3.2.9 Identification of gifted pupils on the basis of a comprehensive personal profile

According to the literature, probably the most important requirement for an identification procedure is that it should be based on a total personal profile. It has been mentioned in this report that while IQ was initially considered a cardinal criterion of giftedness, more recent literature increasingly indicates that it should no longer feature quite as prominently in identification procedures.

The views of American researchers of the late fifties and early sixties (Getzels and Jackson in US Department of Health, Education and Welfare 1960: 1-18; Angelino in Shertzer 1960: 93-94; Bish in Crow and Crow 1963: 27; Smaltz and Mathisen in Crow and Crow 1963: 37, 39) suggest a move away from IQ as the sole criterion for the identification of gifted pupils. A cardinal reason is probably Guilford's finding (Barbe and Renzulli 1981: 87-102) that intellectual capacity comprehends more than conventional intelligence tests have traditionally measured. These tests rely heavily on powers of convergent thought and are predominantly verbal in orientation. Researchers such as Guilford maintain that divergent thinking contributes greatly to giftedness, although it hardly features at all in existing intelligence tests.

Hence it is not surprising that researchers should have concluded that the existing, universally accepted tests for evaluating intellectual capacity are too limited to serve as the sole criterion for the identification of gifted pupils. Identification should proceed according to a multidimensional approach which allows for the assesment of a variety of abilities other than convergent thought and verbal ability. Barbe and Renzulli (1981: 85-86) point out that the current view of giftedness is much broader than that held at the beginning of the twentieth century. Whereas Terman initially tended to describe giftedness in terms of high intellectual capacity and scholastic achievement, the present view is that, despite the importance of these factors, the individual possesses more abilities than those reflected by intelligence tests and scholastic achievement. Originality, leadership ability, vision and exceptional ability in non-scholastic fields are not measured by conventional intelligence tests. Accordingly Barbe and Renzulli also favour a multidimensional approach to the identification of gifted pupils. Other exponents of such an approach include Torrance (1965: 19-27); Gallagher (1975: 26); Hoyle and Wilks (1975: 32); Fox (Keating 1976: 38); a guide compiled by Human Individual Potentialities (1977: 27); Frasier (Jordan and Grossi 1980: 48-52); Pack (Miller and Price 1981: 39-40); and De Beer (1982: 592).

Barbe and Renzulli (1975: 229), Fox (Keating 1976: 38), Stanley (Colangelo and Zaffrann 1979: 110), Pack (Miller and Price 1981: 39-40) and Feldhusen, Asher and Hoover (1984: 149) all feel that the identification procedure should also clarify the nature of education provision for gifted pupils. For this reason it should employ media that provide information on such a pupil's pattern of abilities, level of scholastic achievement, interests, adaptability, maturity, creative abilities, leadership ability, artistic and musical talent, psychomotor ability and the like. No standard individual or group intelligence tests provide sufficient information of this kind. Identification procedures should clearly indicate the needs, more specifically the educational needs, of gifted pupils.

The conclusion is that the present approach to the identification of gifted pupils is multidimensional. It is epitomised by the view described by Haasbroek and Jooste (1981: 24-25), who recommend that gifted pupils be identified on the basis of a personal profile and in this they are supported by Gouws (1983: 81). According to Haasbroek and Jooste (1981: 24), the aim of this method is to evaluate the abilities of pupils in their totality so as to establish whether they are gifted or not. Various criteria are employed to compile such a personal profile. As much information as possible should be collected, interpreted and evaluated, the following being the minimum requirements:

* Intellectual ability as measured by individual and/or group intelligence tests;
* aptitudes and interests as established by standardised media;
* performance in school subjects;
* achievements in curricular and extracurricular activities;
* parents' evaluation of their children;
* teaching staff's evaluation of pupils;
* peer group's evaluation;
* personality questionnaires and/or projection media;
* standardised scholastic achievement/proficiency tests;
* information on creative ability;
* biographical particulars.

The use of such a personal profile permits more accurate, more reliable and more comprehensive identification. It should also identify the individual educational needs of gifted pupils.

3.2.10 Relation between identification procedure and the provision of education

It should be noted that there is a close relation between the definition and categorisation of gifted pupils, their identification, and special education provision for these pupils. In fact they represent three interwoven strands in the education of gifted pupils.

In view of this the goal of identification should always be kept in mind, namely the provision of suitable educational programmes for the optimal development of such pupils' abilities. By the same token, the type of education provision envisaged for gifted pupils will influence the nature of identification procedures. The importance of this interrelationship between education provision and identification procedures is reflected in the views of Torrance (1965: 25), Gallagher (1975: 81), Tongue and Sperling (1976: 4), Vernon, Adamson and Vernon (1977: 99-100), Roedell, Jackson and Robinson (1980: 27), Karnes and Collins (1981: 5), Mönks (1983: 205), Birch (1984: 159-160) and Feldhusen, Asher and Hoover (1984: 149). If the identification procedures are conducted optimally, this should bring to light the needs of individual gifted pupils, which can then be catered for on an individual basis.

3.2.11 Conclusion

The foregoing has been an exposition of the main requirements for an identification procedure. Since the needs of the community in which such a procedure is implemented may well impose distinctive demands on identification procedures, there are probably further requirements that have not been mentioned here. The needs of the local community may moreover imply greater emphasis on certain requirements than on others. However, the present exposition indicates that the demands made on identification procedures are stringent. Obviously it will not be possible to satisfy all these requirements fully, but a serious attempt should be made to do so.

3.3 MEDIA AND CRITERIA FOR THE IDENTIFICATION OF GIFTED PUPILS

3.3.1 Microlevel planning

In this and the ensuing sections of the report an attempt will be made to provide researchers with a framework for the identification of gifted pupils. Woodliffe (1977: 7) points out that one can hardly be prescriptive in this regard in view of the many factors that determine identification procedures. Hagen (1980: 7) says that the problem in the definition and identification of giftedness is that it is not directly observable but has to be inferred from pupils' behaviour. Since every individual possesses many characteristics which are manifested in a variety of ways in different situations, the identification of gifted pupils is a highly complex matter. In addition, more information is available on certain manifestations than on others, with the result that knowledge concerning the best identification procedure remains fragmentary. Possibly a longitudinal empirical study could help to make up deficiencies.

(1) Definition and categorisation of gifted pupils

In view of the close interrelationship between the identification, definition and categorisation of gifted pupils pointed out in the literature, the following recommendation is made:

Recommendation: The definition and categorisation of gifted pupils as expounded in this report should form the basis and model for identification procedures.

(2) Different phases in the identification procedure

From the works of such researchers as Hildreth (1966: 149150), Martinson and Lessinger (Gallagher 1966: 29), Martinson (1978: 16), Gearheart (1980: 360-366), Haasbroek and Jooste (1981: 127-128) and Karnes and Collins (1981: 6-11), it follows that the identification of gifted pupils should proceed in different phases. On the whole, researchers distinguish between a preliminary and an intensive phase. The first phase is designed to bring a maximum number of potentially gifted pupils to the attention of the panel of evaluators. In the second phase the panel evaluates these pupils intensively by means of various criteria to establish which of them are truly gifted. In this regard the following recommendation is made:

Recommendation: The identification procedure should comprise the following phases:

Phase 1:	Orienting the parties concerned, introducing the project disseminating information
Phase 2:	Provisional identification of gifted pupils
Phase 3:	Intensive identification of gifted pupils
Phase 4:	Selective identification of gifted pupils

(3) The school co-ordinating committee for gifted pupils

In view of the specialised nature of the identification of gifted pupils and the fact that reliable, valid, effective psychometric media for the purpose are still largely lacking, it is not feasible to leave the full responsibility to a single person, however skilled or expert. The task is far too extensive and requires the collection and processing of too many data. Researchers such as Shertzer (1960: 112), Gowan (Barbe and Renzulli 1975: 280-281), Tongue and Sperling (1976: 53-54) and Gearheart (1980: 365) all agree that the identification of gifted pupils should be conducted by a committee or panel.

Such a school co-ordinating committee for gifted pupils would be responsible for the planning of gifted child education at microlevel and could appoint various committees to assist it in this task.

(a) The school co-ordinating committee: preprimary schools

Recommendation: It is recommended that a school co-ordinating committee for gifted pupils be nominated as follows:

MEMBERS	REASON FOR REPRESENTATION
* School principal	As chairman and prime co-ordinator.

* Subject inspectors/superintendents/subject advisors: preprimary education	To obtain their co-operation and support. To ensure that proposed procedures conform to official policy. To check the desirability and feasibility of procedures.
* Teachers at the preprimary school	To obtain their co-operation and support
* Head of department of junior primary education at the preprimary school	To furnish necessary information. To provide feedback on the desirability and implementation of planned procedures.
* Teachers of gifted pupils at the primary school	To obtain their co-operation and support. To furnish information on potential education provision to meet the needs of gifted pupils. To furnish information on learning and personality traits of gifted pupils.
* Representatives of the psychological/educational auxiliary service	To obtain their co-operation and support. To obtain necessary information measuring instruments, procedures relating to psychometric media and so on. To assist in obtaining necessary information from parents and other agencies. To determine the validity and reliability of planned procedures.
* Parents	To represent the parent community so as to secure their co-operation and support.

(b) The school co-ordinating committee: primary schools

Recommendation: It is recommended that a school co-ordinating committee for gifted pupils be nominated as follows:

MEMBERS	REASON FOR REPRESENTATION
* School principal	
* Deputy principal	As possible future chairman and co-ordinator.
* Subject inspectors/superintendents/subject advisors	

* Experienced primary school teachers/subject teachers	
* Teachers of gifted pupils at the primary school	
* Representatives of the psychological/educational auxiliary service	
* Remedial teacher	
* Parents	
* Circuit inspectors/ superintendents of education	To obtain their co-operation and support. To ensure that proposed procedures conform to official policy. To check the desirability and feasibility of procedures. To furnish information on procedures at other schools.
* Departmental head: educational guidance/ school psychologist/ staff member in charge of school guidance programme	To obtain their co-operation and support. To furnish expert advice. To furnish information about gifted pupils.

(c) The school co-ordinating committee: secondary schools

Recommendation: It is recommended that a school co-ordinating committee for gifted pupils be nominated, as follows:

MEMBERS	REASON FOR REPRESENTATION
* School principal	
* Deputy principal	
* Subject inspectors/ superintendents/subject advisors	
* Experienced subject teachers	
* Teachers of gifted pupils at the secondary school	
* Representatives of the psychological/ educational auxiliary service	

*	Parents	
*	Circuit inspectors/ superintendents of education	
*	Departmental head: educational guidance/ school psychologist/ staff member in charge of school guidance programme	
*	Departmental heads	To obtain their co-operation and support To furnish information when required.
*	Class teacher/tutor/ teacher	To obtain their co-operation and support. To furnish information when required.

(d) **Functions of the school co-ordinating committee: gifted pupils**

The functions of such a committee can be formulated as follows:

* Overall planning of education for gifted pupils in a particular school.

* Nominating a planning committee to investigate strategies for identification, school guidance and education provision.

* Orientation of all parties concerned with the education of gifted pupils.

* Liaising with the parent community and the community at large.

* Calling in experts whose specific knowledge and skills can provide relevant input in the education of gifted pupils.

* Nominating the panel of evaluators that will conduct the identification of gifted pupils.

(e) **The panel of evaluators**

The panel of evaluators could consist of members of the school co-ordinating committee: gifted pupils. Because of the confidential nature of the information dealt with by such a panel, parents would obviously be excluded. Various experts could be seconded on an ad hoc basis (for instance in the identification of specific talents).

(4) **Continuous evaluation of gifted pupils**

This report has cited many researchers who believe that the evaluation of gifted pupils should be an ongoing process. The progress of identified gifted pupils following special educational programmes should be carefully monitored. In addition the search for giftedness among a group of pupils should never cease entirely, even when the "supply" appears to have been exhausted. The following is therefore recommended:

Recommendation: Evaluation of gifted pupils should be conducted on an ongoing basis.

(5) Identification of gifted pupils on the basis of a personal profile

As indicated, the idea that gifted pupils should be identified in terms of a multidimensional approach and on the basis of a personal profile, keeps recurring in the literature. The following is therefore recommended:

Recommendation: Gifted pupils should be identified on the basis of a personal profile.

(6) Relation between identification and provision of education

Since many of the researchers cited here have stressed the relation between identification procedures and special education provision for gifted pupils, the following recommendation is made:

Recommendation: There should be a relation between the identification procedure and the provision of special education for gifted pupils.

3.3.2 Media used in the identification procedure

It is vitally important that everyone concerned with the identification of gifted pupils should be fully conversant with the media used in the process - not merely their possibilities but also their limitations. Users of such media should be proficient in handling and implementing them, as well as in interpreting the results.

(1) Media for the evaluation of intellectual capacity

Notwithstanding the controversy surrounding the value of intelligence tests for identification (some researchers reject them totally), Miles (Torrance 1960: 63) maintains that adequate intellectual capacity is a prerequisite for giftedness. Duminy (1963: 47) points out that although giftedness means more than just intellectual capacity, the latter is certainly one - if not the cardinal - component of giftedness. However, it goes hand in hand with a multitude of other equally decisive factors in the manifestation of giftedness. Torrance (1965: 25) believes that intelligence tests are useful for the identification of gifted pupils, but that such data need to be amplified by information obtained via other media. Hildreth (1966: 160) says that media providing information on intellectual capacity and specific talent are irreplaceable in studies of individual potential and scholastic achievement. Roos (1970: 1) feels that intellectual capacity alone is too one-sided to serve as the sole criterion for identifying gifted pupils, but nonetheless regards it as an extremely important component of giftedness.

Gallagher (1975: 11) concurs, maintaining that IQ is one of the principal criteria for identifying gifted pupils. He concludes that even though existing intelligence tests fail to measure all aspects of intellectual capacity, they do to a large extent evaluate the qualities important for future scholastic achievement. His opinion (Gallagher 1975: 13) is that predictive value of the IQ remains impressive. (Congdan 1978: 5-14) gives the evaluation of intellectual capacity an important place in the identification procedure, and Hagen (1980: 42) is very much of the same mind. Schepers (Müller 1979: 4) says that although a high IQ is not synonymous with giftedness, it gives some indication of the general level of the individual's potential development. In this researcher's view (Müller 1979: 1) superior intellectual capacity is the most common of the significant attributes of giftedness. Khatena (1982: 101-103) too believes that intellectual capacity is an important factor in the manifestation of giftedness, even in the case of various specific gifts.

Torrance's view (Gowan, Khatena and Torrance 1981: 10) places the whole question of the value of intelligence tests in identification procedures in perspective:

> "Our work with tests of creative thinking has caused some people to conclude that I advocate the abolition of intelligence tests and the substitution of creative or divergent thinking tests. The truth is that I have continually said that intelligence tests have long been very useful in guiding and assessing mental growth and intellectual potentiality and that they will continue to be useful. I have tried to show why we need to broaden our concept of 'giftedness' from that of the 'child with the high IQ' to include also the highly creative child and other types."

The researcher should maintain a proper perspective on this matter. It is generally agreed that the existing media for evaluating intellectual capacity do not provide a full or completely accurate reflection of the individual's overall intellectual ability - human beings are far too complex for that to be possible. However, it should be noted that the information furnished by intelligence tests is useful when approached from the correct angle. In addition, intellectual capacity as reflected by intelligence test results should not be equated with giftedness, although it is most probably its cardinal, most indispensable component. Hence intellectual capacity and the evaluation of intelligence should feature prominently in identification procedures.

(a) Group intelligence tests

Researchers' criticism of conventional methods of evaluating intellectual capacity is directed largely against group intelligence tests. Many of the objections could be overcome simply by using individual tests. However, the latter do not afford a perfect solution either, partly on account of certain inherent limitations and partly because manpower shortages and high costs preclude their use in all instances. Group intelligence tests will therefore perforce play some part in the identification of gifted pupils.

Group intelligence tests suffer from certain shortcomings, of which the following are probably the most important (Hildreth 1966: 157; Martinson and Lessinger (Gallagher 1966: 29-30); Thomas and Crescimbeni 1966: 42; Gallagher 1975: 371, 385; Martinson 1978: 40, 42, 44; Clark 1979: 120; Brothwick et al. 1980: 18; Pack (Miller and Price 1981: 41); Harrington 1982: 116; O'Neill and Scollay 1983: 12):

* The group situation in which the tests are administered may affect individual pupils adversely.

* Reading ability plays too important a part in the completion of these tests.

* The "ceiling" of the group tests is too low to evaluate the intellectual capacity of gifted pupils adequately.

* These tests are excessively verbally oriented with the result that they discriminate against those gifted pupils who do not possess exceptional verbal ability.

* Group intelligence tests are not sufficiently culture-free or culture-fair.

* Any affective disorders in pupils will impair their performance in group intelligence tests.

From the above one could well conclude that group intelligence tests should play no part at all in the identification of gifted pupils, but this would be wrong. Many researchers do consider these tests useful. However, in view of their imperfections, they should NOT BE USED FOR INTENSIVE IDENTIFICATION BUT ONLY FOR INITIAL SCREENING (SIFTING) PURPOSES, where they can be very useful. They should NEVER be the sole criterion for the identification of gifted pupils, nor for excluding pupils from educational programmes for the gifted.

Obviously researchers involved in the implementation of group intelligence tests should be thoroughly conversant with the relevant test manuals. Appropriate training is absolutely essential in this regard. Users should know what definition forms the basis of each test, the reliability and validity data provided, the standard error of measurement and so on. The aim of the test should also be borne in mind. Care should be taken over the selection of the most appropriate measuring instrument for a particular group of pupils. When interpreting results, differences in language, culture and background among pupils should be taken into account. Often there are pupils who speak a different language at home in an apparently homogeneous language group. In a group situation it is very easy to overlook such factors.

For a selection of appropriate group intelligence tests the HSRC Catalogue of Tests may be consulted. At present suitable group intelligence tests for blacks are not readily available in the RSA. These tests are moreover not appropriate for all age groups in primary schools. However, the catalogue does list group tests that should make good the deficiency in respect of certain population groups in the RSA.

In view of the foregoing, the following recommendations are made:

Recommendation 1: Group intelligence tests should be used only for the preliminary identification of gifted pupils; on no account should they be administered to EXCLUDE pupils from educational programmes for gifted pupils.

Recommendation 2: The use of group intelligence tests should be confined to secondary schools and senior primary school standards.

(b) Individual intelligence tests

From the above it is evident that there are certain misgivings about the value of group intelligence tests in the intensive identification of gifted pupils. The attitude towards individual intelligence tests appears to be somewhat more positive. Researchers feel that although individual tests do not reflect a complete picture of the individual's intellectual capacity, they nonetheless afford a better, more complete, more valid and more reliable image than that provided by group tests.

Some of the limitations of group intelligence tests apply to individual tests as well. Martinson (1978: 57) points out that individual intelligence tests are criticised because they measure verbal factors. Gowan and Demos (1964: 277) agree, pointing out that both the Wechsler Intelligence Scale for Children (WISC) and the Stanford-Binet Intelligence Scale (S-B) are very much verbally oriented in the structure of their items. Gowan and Demos (1964: 277) also maintain that the Wechsler Intelligence Scale for Children (WISC) is not altogether culture-free, although Taylor (1964: 168) points out that the Wechsler Intelligence Scale for Children - Revised (1974) does not suffer from the same weakness. Clark (1983: 416) states that the Stanford-Binet Intelligence Scale (S-B) discriminates against pupils from a poor socioeconomic background and against the culturally dissimilar. In view of the comment by Craig (1977: 7) that most South African intelligence tests rely heavily on the Stanford-Binet Intelligence Scale (S-B) and other overseas tests, there is a possibility that local individual scales may not be altogether culture-free either.

Obviously the administration of individual intelligence tests is a highly specialised affair. Unfortunately the necessary skilled manpower is not always available. Because the use of these tests is very time-consuming and because they can be administered only individually, they are also costly.

Hildreth (1966: 161), Martinson and Lessinger (Gallagher 1966: 32) and Martinson (1978: 58) feel that individual intelligence tests should have a higher "ceiling" to evaluate the intellectual capacity of gifted pupils properly. Compared with group tests, individual tests show up quite well in this respect, although the problem persists to some extent. Because individual intelligence tests are not as a rule standardised for one particular age group only, they afford younger gifted pupils an opportunity to complete difficult items. Gowan and Demos (1964: 277) and Hagen (1980: 18) also claim that pupils' reading ability does not play such a significant role in the completion of an individual test, so that gifted pupils with a reading disability or impairment are not necessarily penalised.

Perhaps the greatest advantage of individual intelligence tests is that pupils are not evaluated in an impersonal test situation. Hence the administration of an individual test entails observation of pupils so as to obtain information about distinctive personality traits. Gallagher (1966: 3) maintains that in this encounter situation the pupil has the investigator's undivided attention and the latter can offer encouragement and praise, which will make it hard for the pupil not to do his best. Other researchers such as Gowan and Demos (1964: 277), Hildreth (1966: 161), Newland (1976: 201), Martinson (1978: 56), Brothwick *et al*. (1980: 18-19), Hagen (1980: 18-19) and Khatena (1982: 67) feel that individual intelligence tests have enormous advantages over group tests for the following reasons: test conditions are more favourable; they evaluate a wider range of intellectual abilities; they afford a clearer, more reliable image of intellectual ability; results have diagnostic value; often they do not make use of multiple-choice items, permitting qualitative analysis of answers; and they provide a more detailed picture of pupils' cognitive functioning. Several of the above researchers also mention the value and possibilities of qualitative analysis of the results of individual intelligence tests.

These advantages are probably the reason why many other researchers attach great importance to the use of individual intelligence tests in the identification procedure (Gowan and Demos 1964: 277; Ward as quoted by Torrance 1965: 23; Pegnato (Gallagher 1966: 34); Terman as quoted by Terman and Oden (Dennis and Dennis 1976: 53); Tongue and Sperling 1976: 15; the guide compiled by Human Individual Potentialities 1977: 29; Vernon, Adamson and Vernon 1977: 101-105; Clark 1979: 117; Callow (Povey 1980: 111); Frasier (Jordan and Grossi 1980: 54).

As in the case of group intelligence tests, users of individual tests should consult the relevant manuals to familiarise themselves with the definition on which the test is based, the reliability and validity data provided, the standard error of measurement and so on. And, as in the case of group intelligence tests, differences in language, culture and background among pupils should be taken into consideration when administering individual tests and interpreting the results.

For a selection of suitable tests the HSRC Catalogue of tests may be consulted, although individual intelligence tests are not available for all population groups and age groups in the RSA. Proposals on how to cope with this deficiency will be made later in this report. In view of the foregoing, the following recommendation is made:

Recommendation: Individual intelligence tests should be used for intensive identification of gifted pupils in preprimary, primary and secondary schools. In view of the non-availability of individual intelligence tests for all population and age groups in the RSA, it is essential that suitable tests be developed.

(c) Problems attending the determination of cut-off points

The establishment of cut-off points in respect of scores obtained by pupils in intelligence tests is much disputed and consequently problematic. A further complication is that many researchers are none too specific on the subject, while the particular category of giftedness under investigation is often not clearly defined. However, the literature seems to indicate that an IQ cut-off point in the vicinity of 130 is customary in respect of intellectually gifted (intellectually talented/able, academically gifted/talented/able) pupils. Percentage-wise this implies the top 2,5 to 3 per cent of the school population. Researchers who support this approach include Martinson and Lessinger (Gallagher (1966: 26-27), the guide compiled by Human Individual Potentialities (1977: 24), Vernon, Adamson and Vernon (1977: 64), Gearheart (1980: 369), Painter (1980: 38) and Hewett and Forness (quoted by O'Neill and Scollay (1983: 11).

It is important that the approach to cut-off points should not be arbitrary. The figure should and could be adjusted upwards or downwards depending on circumstances. Vernon, Adamson and Vernon (1977: 65) maintain that the IQ cut-off point for gifted pupils may be higher or lower depending on the general intellectual level of the school population. Much the same idea is put forward by Painter (1980: 28-30). Harrington (1982: 113) also advocates caution in the implementation of cut-off points. Often a difference of a few IQ points is not statistically significant, so that it would be wrong te exclude one pupil with an IQ of 129 and include another with an IQ of 130.

The literature is not very helpful with regard to the IQ cut-off points for the identification of specifically gifted pupils. Some researchers maintain that fixed cut-off points for these categories of gifted pupils are in fact unnecessary, but Hildreth (1966: 36-38) and Khatena (1982: 101-103) both feel that intellectual ability plays some part in most categories of giftedness. Gearheart (1980: 369) gives a figure of approximately 5 per cent of the school population which, in terms of IQ, implies a cut-off point of about 125. The Division of Curriculum and Instruction and the Department of Psychological Services, Milwaukee Public Schools (Crow and Crow 1963: 33) cite 75 per cent, implying an IQ cut-off point of about 110. By and large researchers such as Vernon, Adamson and Vernon (1977: 65), Haasbroek and Jooste (1981: 129) and Khatena (1982: 101-102) agree with the latter figure.

From the preceding one gathers that researchers consider an IQ cut-off point in the vicinity of 130 to be the norm for the identification of intellectually gifted pupils. Concerning the identification of specifically gifted pupils, however, the guidelines are less clear, although some researchers maintain that intellectual capacity plays a part in the manifestation of at least certain specific gifts. In the case of the specifically gifted, researchers appear to advocate a lower IQ cut-off point.

In view of the foregoing, the following recommendations are made:

Recommendation 1: For the identification of intellectually gifted pupils an IQ cut-off point of 130 is favoured. However, in view of the standard error of measurement of most commonly used intelligence tests, it is recommended that this figure be adjusted slightly downwards to 125 (roughly the 95th percentile).

Recommendation 2: For the identification of specifically gifted pupils an IQ cut-off point of 120 is recommended, but this cut-off point will not apply to all categories of specific giftedness.

(2) Aptitude tests

Since aptitude tests cast more light on specific intellectual abilities, they are extremely valuable in the identification procedure. They also help to broaden the conception of intellectual capacity, a requirement stressed by numerous researchers. This is probably why aptitude tests are included in identification procedures by such researchers as Sumption and Luecking (1960: 58-59), Bish (Crow and Crow 1963: 27), Gold (1965: 92), Fox (Keating 1976: 38-39), Tongue and Sperling (1976: 14), Stanley (Colangelo and Zaffran 1979: 112-113), Haasbroek and Jooste (1981: 128) and Tannenbaum (1983: 346-347, 366).

As in the case of intelligence tests, it is essential that test users be thoroughly conversant with the test in question. Since some of these tests are also administered in a group context, it should be noted that they are subject to much the same limitations as group intelligence tests.

For the use of specific tests, consult the HSRC Catalogue of tests, although aptitude tests are not available for all age groups. Cut-off points for scores obtained will be discussed in due course.

In the light of the foregoing, the following recommendation is made:

Recommendation: Aptitude tests should be used as a meaningful supplement to the information obtained from intelligence tests in the intensive identification of gifted pupils.

(3) Media for the evaluation of scholastic achievement

The pupil's level of scholastic achievement is one of the principal criteria for the identification of gifted pupils. There are mainly two ways of evaluating scholastic achievement: using school examination marks as a criterion, and administering standardised scholastic achievement tests/scholastic proficiency batteries. Although there is a difference between scholastic achievement tests and scholastic proficiency batteries, for the purposes of this report the two will be considered synonymous - an approach often encountered in the literature as well.

Although the use of school examination marks as a criterion of scholastic achievement is often criticised, it is commonly applied by researchers who maintain that these marks normally possess sufficient reliability and predictive validity to justify their use for purposes of identification. The following points should however be borne in mind:

- For identification purposes, school examination marks should where possible, afford a cumulative reflection of pupils' scholastic achievements.

- The school examination marks used in the identification procedure should be relevant to the particular category of giftedness being investigated.

- Solitary or occasional declines in scholastic achievement rate should not disqualify a pupil.

- School examination marks should not be the sole criterion for the identification of gifted pupils.

- It should be noted that not all teachers are reliable evaluators of scholastic achievement and that school examination marks reflect a considerable measure of subjectivity.

- The fact that scholastic standards differ from one school to the next (and between teachers at the same school) diminishes the value of this criterion.

- A pupil's choice of subjects often plays an important part in his scholastic achievement rate. Some subjects permit more outstanding achievement than others.

- When there is any doubt about the reliability of this criterion, it should be verified with the aid of other criteria.

Cautious, judicious and expert use of examination marks as a criterion for the identification of gifted pupils will facilitate and expedite the process, since these data are readily available, easy to interpret and intelligible. Exponents of the use of examination marks as a criterion include Shertzer (1960: 110), Strang (1960: 27), Sumption and Luecking (1960: 52-53), Gold (1965: 82), Ward (quoted in Torrance 1965: 23), Hildreth (1966: 154), Thomas and Crescimbeni (1966: 50), Tongue and Sperling (1976: 18), a guide compiled by Human Individual Potentialities (1977: 28), Pilch (Martinson 1978: 130) and Haasbroek and Jooste (1981: 34).

When there is doubt about the reliability and validity of the available school examination marks, they should not be used as a criterion for identification. In that case the pupils' scholastic achievement rate should be verified by means of a scholastic proficiency battery or standardised scholastic achievement tests. An appropriate test can be selected from the HSRC Catalogue of Tests. It is suggested that scholastic proficiency batteries be considered wherever possible.

As in the case of the other tests, the investigator should be thoroughly conversant with these tests. Thus the fact that a test such as the Junior Scholastic Proficiency Battery (JSPB) is not based on any syllabus implies that results should be interpreted with circumspection. Results in these tests should always be viewed against the background of the pupils' actual scholastic achievement.

In view of the foregoing, the following recommendation is made:

Recommendation: It is recommended that cumulative scholastic performance be used in evaluating pupils' scholastic achievement. In cases where the panel of evaluators feels that this information is either inadequate or unreliable and invalid, a scholastic proficiency battery may be used.

Scholastic achievement as a criterion for identifying gifted pupils will naturally be limited to the primary and secondary school. Since standardised scholastic achievement tests/proficiency batteries are not readily available for all population and age groups in the RSA, it is essential that such tests be developed.

(4) Media for the evaluation of reading ability

Although some researchers give these media a place in the identification procedure, the authors of this report feel that they are not really appropriate. They will therefore not be included among the selection media in this report. Reading incapacity, impairment, disability, even problems with reading speed, can handicap all pupils - including the gifted - in respect of most standardised psychometric media, and the same impairment is usually reflected in their scholastic achievement as well. It is therefore important that the reading ability of gifted pupils manifesting signs of reading problems should be evaluated by an expert. Where justified, such pupils should be given the necessary therapeutic assistance.

In the light of the foregoing, the following recommendation is made:

Recommendation: Since reading problems may cause gifted pupils to be overlooked in the identification procedure, the reading ability of gifted pupils who may have such problems should be evaluated.

(5) Media for the evaluation of interests

Media for evaluating the interests of gifted pupils play a special role in the identification of such pupils since they help to clarify and indicate specific educational needs. Hence they form one of the bases for deciding on the type of education to be provided for a specifically gifted pupil.

When evaluating the interests of gifted pupils, it should be borne in mind that in the case of younger children there is as yet no stable, relatively constant pattern (Coetzee 1960: 188-189; Super, Crites and Fouché quoted in Engelbrecht 1973: 84; Fox (Keating 1976: 41) and Van der Walt 1979: 140-142). In the case of young gifted pupils this type of information should therefore be treated with great circumspection. The aim should be to identify overall trends rather than specific interests.

Nevertheless researchers such as Thomas and Crescimbeni (1966: 47-48), Fox (Keating 1976: 41), Clark (1979: 121), Hagen (1980: 10, 37), Haasbroek and Jooste (1981: 128), Pack (Miller and Price 1981: 44) and Gouws (1983: 44) believe that pupils' interests should be taken into account in the identification procedure. In establishing the interest patterns of gifted pupils one should obviously not rely exclusively on standardised tests, but also on interviews with parents, teaching staff and pupils, anecdotal reports and biographical data, which often afford useful additional information.

It is essential that users should be thoroughly conversant with these media. Interest questionnaires frequently employ ipsative measurements, for example, and these have significant implications for statistical processing and interpretation.

For the appropriate media to use, consult the HSRC Catalogue of tests.

In the light of the foregoing, the following recommendation is made:

Recommendation: An interest questionnaire should be used with a view to selective identification of gifted pupils. Information obtained in this way should be supplemented by means of interviews, biographical data, anecdotal reports, etc. The use of interest questionnaires should be restricted to secondary schools.

(6) Media for the evaluation of creative ability

Overseas, particularly in the USA, there is a great variety of media for evaluating creative ability. In the RSA certain media, such as the High School Personality Questionnaire (HSPQ) and the Jung Personality Questionnaire (JPQ), give some indication of any creative ability an individual may possess. Nevertheless the identification and evaluation of such ability remains a controversial and complex matter. Tannenbaum (1983: 270) explains, with reference to the USA, that although a great many so-called creativity tests are constructed, little is known about their validity; in cases where predictive validity, for instance, is given, the results reported are not conclusive.

In the midst of the controversy surrounding this topic there appears to be reasonable consensus on one aspect of it. Various researchers indicate that there is some relation between creative ability and intellectual capacity. The current view is that high intellectual capacity is a necessary but not a sufficient component for the development of creative ability, in the sense that it will permit but not guarantee such development. Nevertheless researchers such as Taylor (Gallagher 1966: 53), Thomas and Crescimbeni (1966: 43), Guilford (Gowan, Khatena and Torrance 1981: 67) and Thorndike (quoted in Tannenbaum 1983: 293) feel that standard intelligence tests are not adequate for the identification of pupils with exceptional creative ability and should therefore not be used for that purpose. In fact Torrance is quoted by Taylor (Gallagher 1966: 54-55) as saying that such a method would result in considerable wastage of creative potential through lack of identification. There are researchers, such as Vernon, Adamson and Vernon (1977: 105), who maintain that the value of individual intelligence tests should not be underrated in this regard, yet it would seem that media other than intelligence tests are necessary for the discovery and evaluation of exceptional creative ability.

The construction of such media is extremely problematic, however, due to the lack of a suitable, generally accepted operational definition and the divergent approaches to creativity. Treffinger, Renzulli and Feldhusen (Barbe and Renzulli 1981: 145) maintain that some researchers regard creativity as cognitive in character, whereas others describe it in terms of personality attributes. The former group appears to ignore the possibility of an affective component in creativity, whereas the second group overlooks the importance of basic cognitive ability for creative problem solving. A valid evaluation procedure would probably have to allow for both components.

A number of researchers strongly question the value of most existing media for the evaluation of creative ability. A major problem besetting the construction of such media is *validity*: to make a significant contribution to research, media must produce valid results, but there is as yet no clarity about the nature of the criteria that should be applied for this purpose. The problem is complicated by the fact that, according to Hagen (1980: 10), creative ability is not monodimensional. As a result, gifted pupils who manifest exceptional creative ability in some areas may not be creative in other fields. Hagen (1980: 18) maintains that there are few, if any, validity data in respect of published media for the evaluation of creativity, and that they should therefore be used exclusively for research purposes and not for identification and evaluation. Treffinger, Renzulli and Feldhusen (Barbe and Renzulli 1981: 144) concur, arguing that existing media do not have an adequate theoretical basis. In addition Milgram, Milgram and Landau (1974: 2) point out that some media for the evaluation of creative ability show such a high correlation with intellectual capacity that the two cannot be distinguished from each other.

It may be worth noting that according to Treffinger, Renzulli and Feldhusen (Barbe and Renzulli 1981: 143), Torrance had proceeded eclectically in his construction of media for the evaluation of creative ability. This created problems, since the method produced media that lacked a uniform, comprehensive theoretical basis. Willings (1980: 22) points out that the media developed by Torrance are largely aimed at evaluating divergent thinking capacity, which represents only one facet of creativity. If one considers that Torrance is actually one of the foremost researchers of creativity in the world, one can form some idea of the tremendous problems attending the evaluation of this ability. Perhaps it should be borne in mind that although after many decades there is still considerable uncertainty about what is meant by such concepts as "intelligence" and "personality", tests are nontheless used to evaluate them. While such an approach is obviously open to criticism, some of these tests have proved their usefulness over the years.

One can therefore conclude that there is still no clarity about such matters as the nature of creative ability, its relation to intellectual capacity and other personality attributes, how it should be identified, whether the accent in identification procedures should be on convergent thinking, divergent thinking, personality traits or all three, and whether existing media possess sufficient validity.

There is some agreement, however, that existing intelligence tests do not sufficiently elucidate creative ability and should therefore not be used for purposes of identification and evaluation.

Current trends indicate that in the identification and evaluation of exceptional creative ability, the accent should be on capacity for divergent thought. However, researchers such as Taylor (Gallagher 1966: 59-60), Thomas and Crescimbeni (1966: 44), Vernon, Adamson and Vernon (1977: 106), Martinson (1978: 55-56), Hagen (1980: 36), Guilford (Gowan, Khatena and Torrance 1981: 70), Treffinger, Renzulli and Feldhusen (Barbe and Renzulli 1981: 143), and Rimm, Davis and Bien (1982: 165) maintain that other factors also merit attention, for instance biographical data, specimens of work and the conative and personality characteristics of pupils. Such a view strongly suggests a multidimensional approach to evaluation.

Some of the aforementioned authors, as well as Tongue and Sperling (1976: 14), Haasbroek and Jooste (1981: 129), Pack (Miller and Price 1981: 45) and Torrance (1984: 153-156), feel that evaluation of the creative ability of gifted pupils should feature prominently in the identification procedure. Various reasons are advanced. In the first place, information about creative ability casts further light on the gifted pupil; secondly, it gives an indication of his educational needs and the type of education provision required.

Until such time as suitable standardised media become available to researchers in the RSA, existing media will have to be used with great caution. *For the time being* it would seem advisable to use the checklist in ADDENDUM L with a view to the identification of exceptional creative ability. The panel of evaluators should moreover be expanded to include experts who can evaluate specimens of pupils' work. In view of the problematic nature of this field and the extremely subjective, unreliable nature of evaluation in this regard, the identification of exceptional creative ability should be approached with great circumspection and insight. For this reason it is advisable to use, in addition to ADDENDUM L, the *High School Personality Questionnaire (HSPQ)* and the *Jung Personality Questionnaire (JPQ)*.

In the light of the foregoing, the following recommendation is made:

Recommendation: The creative ability of every gifted pupil should be examined with a view to selective identification. *For the time being* ADDENDUM L, the HSPQ and the JPQ should be used for this purpose.

(7) Media for the evaluation of personality traits

Various researchers affirm the importance of knowledge about the personality traits of gifted pupils. Thus DeHaan (1963: 29) and Cattell and Butcher (quoted in Vernon, Adamson and Vernon 1977: 115) maintain that scholastic achievement depends not only on intellectual capacity but also on motivation and personality attributes. Rice (1970: 72), Newland (1976: 204), Pack (Miller and Price 1981: 45) and Taylor (1984: 186-215) believe that knowledge of personality traits provides valuable additional information about gifted pupils. It is helpful in constructing a personal profile and to a large extent indicates the nature of the education to be provided for individual pupils.

Personality traits may be evaluated in many different ways, but for present purposes two types of media will be distinguished: projective techniques and personality questionnaires. Although the second group is subject to severe limitations, these media are widely used in research and have important practical advantages over projective techniques. It should be noted that the results of these media - *as indeed all information about individuals* - should not be viewed in isolation but *against the background of all available information about the person.*

As in the case of the other media discussed in this guide, the researcher should be thoroughly conversant with these media. For a suitable test, consult the HSRC *Catalogue of tests.* Personality questionnaires ought to cast sufficient light on the personality traits of gifted pupils, but in isolated instances where they prove inadequate, further information may be obtained by means of projection media.

In the light of the foregoing, the following recommendation is made:

Recommendation: Media for the evaluation of personality traits should be incorporated into the identification procedure. Since personality questionnaires are widely used in research, and also for practical reasons, these media are preferable. Projective techniques should be used only when personality questionnaires fail to provide sufficient information about a particular gifted pupil.

Personality questionnaires are not available for all age groups; moreover these media cannot be administered to certain age groups. In such cases projective techniques will have to be used.

(8) Performance tests

Since performance tests give the researcher an opportunity for observation, they serve a useful purpose in the identification procedure. However, they should not be used for selection and should be administered only when other media fail to provide sufficient information about a particular pupil.

In the light of the foregoing, the following recommendation is made:

Recommendation: Performance tests may be included in the identification procedure if the panel of evaluators feels that other media do not furnish sufficient information about a particular gifted pupil.

(9) Collecting biographical data

There are various ways of obtaining biographical data, for instance from autobiographies, biographies and interviews. The usual method is the questionnaire.

Taylor (Gallagher 1966: 59), Tongue and Sperling (1976: 14, 20), Martinson (1978: 50), Hagen (1980: 29), Haasbroek and Jooste (1981: 32), Wallace (1982: 4) and Clark (1983: 182) all feel that biographical data can serve a useful purpose in the identification of gifted pupils. Haasbroek and Jooste (1981: 32) maintain that by providing such information, parents can give useful clues to facilitate the discovery and determination of giftedness in their children. Taylor (Gallagher 1966: 59), Hagen (1980: 29) and Khatena (Gowan, Khatena and Torrance 1981: 175) attach great importance to the use of biographical data for the identification of gifted pupils with exceptional creative ability.

In the light of the foregoing, the following recommendation is made:

Recommendation: A biographical questionnaire should be used in the identification procedure. ADDENDUM M can serve this purpose for the time being.

3.3.3 Other criteria for the identification of gifted pupils

Sternberg (1982: 157) believes that standardised psychometric media can play a useful part in the identification procedure. He maintains, however, that these media do not afford a correct evaluation of *all* pupils in *all* situations and that consequently certain gifted pupils may be overlooked in the identification procedure. The problem is one of validity. Not only do some standardised psychometric media have insufficient validity, but the validity of the results may vary from one individual to another, implying that results obtained for one pupil may be less valid than those for another. This is because standardised media make insufficient allowance for individual differences between pupils. In addition these media are often administered under artificial, stressful conditions which can cause negative affective involvement on the pupil's part and result in erroneous evaluation. It should be stressed yet again that no one medium nor even a carefully selected *group* of media, can *fully* reflect all the attributes of a particular pupil. For this reason the identification procedure should include not only standardised psychometric media but also other criteria as expounded below.

(1) Observation

Observation is one of the most appropriate methods of obtaining information about gifted pupils. In fact Neethling (1981: 133) writes that researchers in Britian today set such store by this type of information as to suggest that they think the most accurate indications of giftedness can be gathered from meaningful daily activities rather than from arbitrary or artificial test situations. This implies that everyday behaviour also provides valuable indications of giftedness.

Various researchers such as Cutts and Moseley (1958: 17-18), Shertzer (1960: 11), Gold (1965: 81), Hildreth (1966: 165), Thomas and Crescimbeni (1966: 55) and Hagen (1980: 12) refer to the teacher's role in collecting this sort of information. Taylor (1984: 22) points out that observation is without a doubt one of the most common forms of evaluation and that virtually every moment in the classroom can yield masses of data. Teaching staff are uniquely placed to observe pupils in a variety of situations. Obviously such observation should not be random and staff should be trained to conduct it as effectively as possible.

Not only teaching staff should be involved in the observation of possibly gifted pupils. Gold (1965: 83) points out that giftedness is manifested in a variety of contexts, so that interaction with other pupils and activities at home, no less than in the school environment, constitute sources of information. It follows that observation by the peer group can contribute much to the identification procedure. It should further be noted that parents are in a position to furnish important information about their possibly gifted child, although this observation too should be conducted according to certain guidelines. Hagen (1980: 12-13) concurs with this view, maintaining that other adults in the community can provide additional useful information about possibly gifted pupils. Thomas and Crescimbeni (1966: 63) also subscribe to this view.

In the light of the foregoing, the following recommendation is made:

Recommendation: Information about gifted pupils should be obtained through structured observation by teaching staff, parents and peers. Structured observation by the peer group should be confined to the senior standards of primary schools and to secondary schools.

(2) Nomination of possibly gifted pupils by teaching staff

According to the literature, the whole matter of nomination of possibly gifted pupils by teaching staff is debatable. From the preceding sections it is clear, however, that teaching staff are uniquely placed to observe pupils, so that it would be a pity not to use this source of information in the identification procedure. After all, teaching staff get to know pupils well, sometimes over a period of several years. The authors believe that the potential contribution of informed and interested teachers to the identification procedure should not be underestimated, although the value of nomination by teaching staff depends greatly on the quality of the observations. For this reason it is necessary to train teachers to make such observations. The following information sheets can be used for this purpose:

ADDENDUM B INFORMATION SHEET 2 Information sheet for teaching staff concerning intellectually gifted pupils

ADDENDUM C INFORMATION SHEET 3 Information sheet for parents and teaching staff concerning gifted underachievers

ADDENDUM D INFORMATION SHEET 4 Information sheet for parents and teaching staff concerning specifically gifted pupils

ADDENDUM E INFORMATION SHEET 5 Information sheet for teaching staff concerning culturally dissimilar gifted pupils

ADDENDUM F INFORMATION SHEET 6 Information sheet for parents and teaching staff concerning gifted preprimary pupils

The ways in which these addenda can be incorporated into the identification procedure will be explained later in this report.

The literature is negative about the value of nomination by teaching staff in the identification procedure. Pegnato (Gallagher 1966: 40) concludes that teaching staff are unable to perform a useful function in this respect. Martinson (1978: 17-18) cites studies by Gallagher, Walton, Jacobs and Barbe, while Hildreth (1966: 151-152) likewise refers to a number of studies that arrived at similar conclusions. Gold (1963: 81-82) maintains that teaching staff are highly subjective in their evaluation of pupils. Often they regard the hardworking, obedient, conformist and "pleasant" pupil as gifted, which may not necessarily be the case. In addition teachers tend to lose sight of the pupil's background, with the result that the pupil's situation rather than his actual abilities are evaluated. In many cases teachers have difficulty in distinguishing between a pupil's abilities and motivation and his parents' ambition.

Probably not all these criticisms are altogether justified. If teaching staff are given insufficient guidance on what to observe and what criteria to apply when nominating pupils, one can hardly expect very positive results. If teaching staff are brought into the identification procedure (as is desirable), it is vitally important that they be given the necessary guidance. This view is supported by several researchers, including Hildreth (1966: 151), Newland (1976: 204), Gearheart (1980: 360-362) and Tannenbaum (1983: 360). Hagen (1980: 22) even asserts that the failure of the nomination procedure is often attributable to inherent deficiencies in the procedure and the checklist used rather than to incompetence on the part of teachers.

Many researchers favour the use of nomination by teaching staff subject to certain provisos. O'Neill and Scollay (1983: 11) point out that it should not simply be assumed that all teaching staff are competent nominators, implying that they should be selected for the purpose. From the views of Rice (1970: 76), Fox (Keating 1976: 43), Martinson (1978: 18), Gearheart (1980: 360-362) and Painter (1980: 34-36) one concludes that nomination should not be the sole criterion for identification.

Despite criticism of the use of nomination by teaching staff, one has to agree with Painter (1980: 34-36) and Haasbroek and Jooste (1981: 30-31) that teachers' evaluation of pupils can be fruitfully applied in the identification procedure, since teaching staff are (or ought to be) best able to know the achievements, interests, aptitudes and personality traits of every pupil. It is essential, however, that teachers be trained for this task. Such training should improve teachers' proficiency in this regard, as borne out by studies cited by Clark (1983: 175).

For the purposes of this report, the nomination of possibly gifted pupils by teaching staff can be conducted with reference to the following checklists:

ADDENDUM H CHECKLIST 2 Structured observation by teaching staff: identification of possibly gifted pupils by means of a checklist

ADDENDUM J CHECKLIST 4 Structured observation by teaching staff: identification of possibly gifted preprimary pupils by means of a checklist

In the light of the foregoing, the following recommendation is made:

Recommendation: Nomination of possibly gifted pupils by teaching staff should be used in the identification procedure. To this end ADDENDA B, C, D, E and F and the checklists in ADDENDA H and J should be applied.

(3) Nomination of possibly gifted pupils by their parents

In the context of the identification procedure it should never be forgotten that the child's primary educators are his parents. Pupils usually spend most of their time at home, and as a rule parents have closer contact with their offspring than do teachers with their pupils. Consequently parents should take part in the identification procedure.

Such researchers as Thomas and Crescimbeni (1966: 63), Martinson (1978: 46-47), Hagen (1980: 12-13) and Painter (1980: 45-46) regard parents as a cardinal source of information about their children. They often have information that nobody else is aware of, they know their children best and can give teaching staff new insights into a child's abilities and interests. Research such as the study by Jacobs (Martinson 1978: 47) moreover indicates that in the matter of identifying giftedness parents are more effective than teaching staff. It should be borne in mind, however, that parents are extremely subjective about their children and may be excessively eager to nominate them, although the reverse also sometimes happens (Hagen 1980: 12-13; Painter 1980: 45-47). In addition parents often lack the necessary insight into the phenomenon of giftedness. This implies that they should receive training in this regard, to which end the following may be used:

ADDENDUM A INFORMATION SHEET 1 Information sheet for parents concerning intellectually gifted pupils

ADDENDUM C INFORMATION SHEET 3 Information sheet for parents and teaching staff concerning gifted underachievers

ADDENDUM D INFORMATION SHEET 4 Information sheet for parents and teaching staff concerning specifically gifted pupils

ADDENDUM F INFORMATION SHEET 6 Information sheet for parents and teaching staff concerning gifted preprimary pupils

For the purposes of this report, nomination of possibly gifted pupils by their parents can be conducted with reference to the following checklists:

ADDENDUM G CHECKLIST 1 Structured observation by parents: identification of possibly gifted pupils by means of a checklist

ADDENDUM K CHECKLIST 5 Structured observation by parents: identification of possibly gifted preprimary pupils by means of a checklist

In the light of the foregoing, the following recommendation is made:

Recommendation: Nomination of possibly gifted pupils by their parents should be used in the identification procedure. ADDENDA A, C, D, and F and the checklists in ADDENDA G and K may be used for this purpose.

(4) Nomination of possibly gifted pupils by their peer group

Many researchers believe that the peer group can supply useful information relating to the identification of possibly gifted pupils in their midst. Hagen (1980: 13) maintains that peers can provide valuable information on pupils' possible leadership ability, organisational talent, capacity for practical problem solving and certain specific gifts. On the other hand, peer group information on scholastic achievement and ability in abstract problem solving is less reliable. Haasbroek and Jooste (1981: 33) believe that, because of pupils' keen powers of observation, they are usually fully aware of their classmates' abilities and can provide information on who is quick-witted or talented in a particular field. Such researchers as Thomas and Crescimbeni (1966: 62), Tongue and Sperling (1976: 18), Martinson (1978: 46) and Clark (1979: 120) refer to the value of nomination of possibly gifted pupils by the peer group.

For the purposes of this report nomination of possibly gifted pupils by the peer group may be conducted with reference to the following checklist:

ADDENDUM 1 CHECKLIST 3 Structured observation by peer group: nomination of possibly gifted pupils by means of a checklist

In the light of the foregoing, the following recommendation is made:

Recommendation: Nomination of possibly gifted pupils by the peer group should be used in the identification procedure. To this end the checklist in ADDENDUM I should be applied. Nomination should be confined to the *senior standards in the primary school and to the secondary school*.

(5) Nomination of possibly gifted pupils by bona fide outsiders

In view of the diversity of possible manifestations of giftedness it can happen that certain specific gifts are manifested outside the home or school context. Pupils may possess gifts of which neither their families nor the teaching staff are aware. Such talents could pass undetected.

Hagen (1980: 13) mentions that many communities have organisations and institutions such as museums, art galleries and churches that offer programmes for pupils. Pupils' participation in such programmes and the nature of their involvement may contribute to the identification procedure. It *could* happen that certain specific gifts are manifested only in such a context. Thomas and Crescimbeni (1966: 63) concur with this view, pointing out that by these means one could also glean information about behaviour and work patterns (and definitely about interests as well)* that may not be noticeable in the classroom.

Although such nominations will not feature prominently in the identification procedure and will not be equally pertinent in all areas, researchers such as Martinson (1978: 45-46), Painter (1980: 44-45) and Rice (Gearheart 1980: 361) recommend their use. For the purposes of this report no specific procedure is proposed - merely that the panel of evaluators should note the value of such nominations and contact the relevant experts if their knowledge and insights are required in the identification procedure.

In the light of the foregoing, the following recommendation is made:

Recommendation: Bona fide outsiders should also be afforded an opportunity to nominate possibly gifted pupils.

3.3.4 Media and criteria for the identification of specifically gifted pupils

The identification of specifically gifted pupils as laid down in the definition and categorisation of giftedness is one of the more problematic areas in the identification of gifted pupils. There are various reasons for this, including the fact that there are as yet no standardised psychometric media for the identification of many specific gifts. It could also be that some pupils possess specific gifts of which nobody, not even they themselves, is aware because the nature of education provision was or is such that it offered or offers no opportunity for the development of such talents. Because of the necessarily broad view of giftedness adopted in this report, it could also be that certain specific gifts are manifested across such a broad spectrum that it would be difficult to devise criteria for describing them. All these problems complicate the researcher's task.

Consequently the identification of specific gifts remains rather like the search for the proverbial needle in the haystack, and the criteria and media proposed in this report should be regarded as purely tentative and provisional: *they have not been standardised and their reliability and validity are therefore not known.* It is suggested that research into the development of suitable media be undertaken.

(1) Evaluation of demonstrated achievement in a specific field

(a) Primary and secondary school pupils

Owing to the continuing lack of standardised psychometric media for the identification of specifically gifted pupils, *the identification procedure will have to rely mainly on evaluation of the demonstrated achievement of pupils in a specific field.* If the panel of evaluators is constituted on the lines proposed in this report, it should be capable of such evaluation in most cases. If necessary, other experts may have to be called in.

---

* Editor's insertion.

Evaluation of the demonstrated achievement of gifted pupils in a particular field should however be seen as one of the main criteria for the identification of such pupils. This approach is nothing new in the literature, as witness the works of DeHaan (1963: 25-29), Gold (1965: 96-99), Hildreth (1966: 163-164), Thomas and Crescimbeni (1966: 47), Tongue and Sperling (1976: 18), Martinson (1978: 48-49) and Hagen (1980: 13).

Despite certain shortcomings, notably a lack of objectivity, demonstrated achievement provides valuable information on motivation, perseverance, aptitudes, interests, task orientation and the like. Some of the aforementioned researchers refer to the value of this criterion, particularly for the identification of pupils with exceptional creative ability, and point out the role of experts as members of the panel of evaluators. The effectiveness of the criterion relates closely to the opportunities that possible specifically gifted pupils have for manifesting their talent.

In the light of the foregoing, the following recommendation is made:

Recommendation: Apart from other recommended criteria, great emphasis should be laid in the identification procedure on the demonstrated achievement of specifically gifted pupils in the relevant field.

(b) Preprimary school pupils

In the case of these pupils, the classification of specific gifts contained in ADDENDUM F applies. In the identification of gifted preprimary school pupils, the emphasis is very much on strikingly advanced creative work.

(2) Exceptional aptitude, interest and ability (proficiency) in respect of a specific academic field

Sometimes specifically gifted pupils manifest their talent in one or more school subjects (possibly even outside the school context) by their outstanding performance in the particular field. With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following media/criteria can be used for identification:

- Intelligence tests
- An aptitude test battery
- A scholastic proficiency battery
- An interest questionnaire
- Cumulative scholastic achievement in the relevant field

Cumulative scholastic achievement - that is, pupils' demonstrated performance in the given field - should feature prominently in the identification procedure.

(3) Exceptional creative ability

An important consideration here is that creative ability is manifested *in a particular field of achievement* and does not reveal itself in isolation. Specific giftedness should therefore always be viewed in conjunction with other categories of giftedness. With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria/media can be used for identification:

- The checklist in ADDENDUM L
- Intelligence tests
- An interest questionnaire
- A personality questionnaire (particularly the *High School Personality Questionnaire (HSPQ)* and the *Jung Personality Questionnaire (JPQ)*
- Evaluation of demonstrated creative ability by an expert

(4) Exceptional leadership ability

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

- A pupil with exceptional leadership ability is able to control his feelings, refrain from emotional involvement in other people's problems and act purposefully in crisis situations.
- He possesses a realistic, positive self-image and knows his own limitations and potential.
- His behaviour indicates a considerable degree of individualism, he is able to evaluate situations and act according to his convictions in effecting change. He is capable of independent thought, action and execution of tasks and instructions.
- He evinces considerable self-confidence, motivation, resoluteness, foresight and perseverance.
- His conduct is characterised by reliability, industriousness, conscientiousness, self-discipline, modesty and gratitude.
- He is willing and able to assume leadership of a group and to shoulder the responsibilities of leadership.

- He is able to form positive interpersonal relationships and to promote and ensure co-operation.

- Because of his sense of responsibility, purposefulness, perseverance, resoluteness, self-discipline, industry, conscientiousness and gratitude, he sets a good example.

- He is prepared to take the initiative, particularly in problem situations.

- He has the ability to organise, sum up situations quickly and direct their course by organising people and manipulating circumstances in pursuit of set objectives.

- He shows sensitivity to people's feelings and situations.

- He manifests positive interpersonal relationships, a friendly and charming personality, mixes easily with groups and gets along well with equals and superiors alike.

- He is willing to take part in collaborative activities and contributes by initiating new ideas of his own.

- He is able to adapt to changing circumstances and thus manifests flexibility of mind and conduct.

- Depending on circumstances, he is able to be either a conformist or a non-conformist.

- Both to his fellow pupils and possibly to some adults as well, he is truly someone to look up to and is accepted as a leader.

- He is able to evaluate other people's abilities and qualities and therefore shows insight into their actions, motives, values and preferences.

- He is able to form lasting relationships with his peer group and adults.

- He has a certain authenticity, openness, even charisma that attracts people and inspires trust.

- He shows considerable social responsibility in the sense that he is concerned about the problems of life and actively tries to offer solutions.

- He respects and values other people's opinions.

- He has a healthy, balanced outlook and a good sense of humour.

- As a rule, he is of above average intellectual ability and his scholastic performance is reasonable.

- Sometimes he tends to dominate other pupils, although usually not in an offensive way.

* As a rule he respects the authority of his superiors and gets along well with teachers.

* A quality frequently found is *humility*, one of the hallmarks of true greatness.

Naturally no one pupil is likely to possess all these attributes, whilst some pupils in this category of specific giftedness may manifest characteristics not mentioned here. Should the listed criteria prove inadequate to identify certain pupils, the following criteria/media may be used to augment the available information:

* A personality questionnaire and/or projection media
* An attitude questionnaire
* An interest questionnaire
* Anecdotal reports that should indicate actual manifestations of this specific talent

(5) **Exceptional aptitude for and command of language and creative powers that could enable the pupils to develop into a prose writer or poet**

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

* The pupil has a good vocabulary, mastery of syntax and the ability to formulate ideas. He understands difficult words and terms and uses them correctly.

* He is able to communicate with others at the level required by the conversation.

* He can argue a point logically, with a meaningful and versatile command of language.

* He tells or writes imaginative, absorbing stories and shows a talent for writing prose, poetry or drama.

* He evinces a keen interest in literature, reads the works of great writers, is interested in their style and able to analyse it critically.

* His work displays an imaginative use of language, imagery and figures of speech.

* He has a sound intellectual capacity.

* His marked creative ability is reflected in the work he does in the field of language.

The aforementioned criteria can be augmented by the following criteria/media in the identification procedure:

* Intelligence tests

- An aptitude test battery

- An interest questionnaire

- Standardised scholastic achievement tests/proficiency tests/cumulative scholastic achievement in language

- Expert evaluation of demonstrated achievement in this field.

In such evaluation only those subsections of standardised psychometric media that are relevant to this specific gift should be considered.

(6) Exceptional talent for acting, writing or producing dramas

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

- The pupil understands human nature and behaviour.

- He shows understanding for the complexity of society by virtue of his insight into the diversity of human motives and emotions and the conflict they generate.

- For the aforementioned reasons he shows insight into and understanding of the action of a drama (which represents an excerpt from life) and through dramatisation is able to interpret it correctly.

- He therefore has insight into and understanding of the situations (conflict, romance, humour, sadness) depicted in a drama and interprets them correctly).

- He is able to express emotions by means of vocal intonation, attitude and gesture and has an exceptional talent for dramatising feelings and experiences.

- He is intensely interested in activities associated with drama, particularly the production of plays, and likes it when listeners/viewers become emotionally involved.

- He derives great satisfaction from activities associated with this field.

- He writes plays and produces them.

- His demonstrated achievement in this field attests to his creative ability.

- He has a sound intellectual capacity.

- He has keen critical powers of aesthetic judgement.

The aforementioned criteria can be augmented by the following criteria/media in the identification procedure:

- Intelligence tests
- An aptitude test battery
- An interest questionnaire
- Anecdotal reports which should show signs of the actual manifestation of this specific talent
- Expert evaluation of demonstrated achievement in this field

(7) Exceptional rhetorical ability

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

- The pupil is widely read.
- He has extensive general knowledge, is conversant with world politics, national affairs and newsworthy items in daily life.
- He has a capacity for logical reasoning, and considerable persuasive powers to impress his point of view on listeners.
- He has a superior, effective command of language and vocal control.
- He is interested in performing in front of people, i.e. in public, and in social interaction and human involvement.
- He is able to captivate an audience through interesting, absorbing, logical argument.
- He has a sound intellectual capacity and his scholastic performance is satisfactory.

The aforementioned criteria can be augmented by the following criteria/media in the identification procedure:

- Intelligence tests
- A personality questionnaire
- An interest questionnaire
- Anecdotal reports which should show signs of the actual manifestation of this specific talent
- Expert evaluation of demonstrated achievement in this field

(8) Exceptional talent for singing or music in respect of masterly performance or composition

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

- The pupil has a strong inner need to express himself (his feelings and emotions) through the medium of sound.
- His whole life attests to a musical disposition, and he evinces a virtually insatiable appetite for music.
- He has good vocal quality and is able to sing or hum in tune.
- He can harmonise vocally without the aid of a score.
- He shows a keen interest in music and associated activities and enjoys listening to music.
- He likes taking part in recitals with other performers.
- He is discriminating about music and interprets compositions sensitively.
- He has a natural sense of rhythm, pitch and tone colour.
- He has good musical co-ordination and an excellent grasp of notation.
- He has a good memory for tunes and is quick to learn a new tune or beat.
- He is able to complete an uncompleted melody.
- He is able to play a musical instrument (or instruments) by ear.
- He is capable of rendering music with feeling.
- He is capable of both elementary and advanced composition.
- He has an almost mystical *sensitivity to music.*
- His achievements in this field attest to outstanding creativity.

Obviously no pupil will manifest all the above attributes. Depending on the particular category of giftedness, some criteria will be stressed more than others. The aforementioned criteria can be augmented by the following criteria/media in the identification procedure:

- Intelligence tests
- An interest questionnaire

- Anecdotal reports which should show signs of the actual manifestation of this specific talent
- Expert evaluation of demonstrated achievement in this field
- Specific aptitude tests

Demonstrated achievement and expert evaluation should be given the most prominence in the identification procedure.

(9) Superior ability, interest and motor and rhythmic skills for performing art forms such as ballet and expressive dancing

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

- The pupil has a spontaneous, irrepressible desire to express his feelings (emotions) through physical movement.
- He is able to express feelings (emotions) through music and expressive dancing.
- He is very healthy and has a prepossessing appearance.
- He is highly energetic and prepared to spend long hours practising.
- He is physically agile, supple and has excellent motor co-ordination which enables him to co-ordinate movement and rhythm with music.
- He is intensely interested in dancing and forms of dancing, has the ability to improvise and devise original dances of his own that express his emotions.
- He has great feeling for music and is highly musical.
- He has the ability to achieve in this field.

The aforementioned criteria can be augmented by the following criteria/media in the identification procedure:

- Intelligence tests
- An interest questionnaire
- Anecdotal reports which should show signs of the actual manifestation of this specific talent
- Expert evaluation of demonstrated achievement in this field

In the identification procedure, demonstrated achievement in the field and expert evaluation should be given the most prominence.

(10) Superior artistic talent for the creative arts

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

* The pupil displays *acute powers of observation and insight* into people and the world around him.

* His insight into people and the world around him is deep and qualitatively distinctive.

* He has a need to express his feelings (emotions) through creative activities.

* He is sensitive and imaginative.

* He is earnestly and personally involved with the object he is creating.

* He is intensely interested in and enthusiastic about art, engaging in a multitude of artistic activities such as modelling, drawing and painting.

* His sustained artistic interest covers not only the technical but also the creative and experimental aspects of art.

* He is interested in the work of other artists and is able to evaluate it, appreciate it and learn from it.

* His artistic creations attest to exceptional creative ability.

* He is prepared to try out new materials and experiences, producing novel, original ideas which he is eager to express artistically.

* He manifests great technical proficiency in the art form of his choice and is prepared to devote time and energy to refining his technique.

* He displays a powerful, sustained urge for perfection in the art form of his choice.

* He has a remarkable capacity for *restructuring* experiences in a way that leads to something new and meaningful.

* In practising his art he manifests dedication and perseverance, marked powers of concentration and a capacity for independent, self-motivated work. His tremendous commitment overrides virtually all his other activities.

* He derives great satisfaction from the things he creates.

* He is innovative in the selection and application of materials.

- He manifests greater maturity than his peers and considerable self-confidence in the course of the creative process.

The aforementioned criteria can be augmented by the following criteria/media in the identification procedure:

- Intelligence tests
- A personality questionnaire
- An interest questionnaire
- Anecdotal reports which should show signs of the actual manifestation of this specific talent
- Expert evaluation of demonstrated achievement in this field

In the identification procedure, demonstrated achievement in the field and expert evaluation of both the achievement and the *creative process* should be given the most prominence.

(11) Superior aptitude and dexterity in respect of mechanical or other design

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

- The pupil is interested in the subject and able to repair and construct mechanical appliances.
- His hobbies indicate an interest in mechanical or other design.
- He becomes so engrossed in his projects that they take up much of his time.
- His interest and proficiency goes beyond the mere creation of a concrete design, construction or model: in reality he is looking for the cause and consequences of certain phenomena. Hence his concern is not merely practical.
- His motor skills are good and he has certain technical skills.
- He shows insight into mechanics, reads widely on the subject and displays exceptional creative ability in respect of mechanical constructions, models, inventions and designs.
- He is not easily discouraged by failure and perseveres with the projects he undertakes.
- He produces distinctive achievements in this field.
- He enjoys reading about and discussing the subject.

- He has considerable ready knowledge about the project in which he is engaged.

- He sets himself high standards of craftmanship, is not easily satisfied with his own performance and strives for perfection and precision.

- He shows exceptional aptitude for the natural sciences and Mathematics.

- He has sound intellectual and creative ability.

The aforementioned criteria can be augmented by the following criteria/media in the identification procedure:

- Intelligence tests

- An interest questionnaire

- Standardised scholastic achievement tests/proficiency test/cumulative scholastic achievement

- Specific media such as the Wiggly Block and specific aptitude tests as well as relevant subsections of other aptitude test batteries

- Expert evaluation of demonstrated achievement in this field

In the identification procedure, demonstrated achievement in the field and expert evaluation should be given the most prominence.

(12) Superior kinesthetic (psychomotor) ability

With a view to identifying such pupils, the following recommendation is made:

Recommendation: The following criteria can be used for identification:

- The pupil manifests exceptional physical attributes such as great speed, strength, suppleness, fleetness, eye-hand co-ordination, gracefulness, ball control, powers of concentration and endurance.

- He is driven by a fierce desire to excel in his chosen kinds of sport.

- He prefers outdoor activities and is greatly interested in sport.

- He excels as a sportsman, often in several different kinds of sport.

- He is exceptionally self-disciplined.

- He enjoys excellent health and is extremely fit.

- As a rule he is sober in his habits.

- He enjoys physical acitivity and exercise, considers it an essential part of his daily routine and is highly energetic.

- He has high ideals with regard to the sports at which he excels.

- He enjoys participating in competitive sports.

- Often he displays marked leadership qualities and above average intellectual capacity.

In the identification procedure the pupil's demonstrated achievements (such as winning colours, breaking records, participating in provincial, national or even international competitions) will be given the most prominence.

(13) Perspective

The criteria for the identification of specifically gifted pupils were assembled from various sources, such as Igleheart (Shertzer 1960: 123-125), DeHaan (1963: 25-39), Smaltz and Mathisen (Crow and Crow 1963: 37-39), Hildreth (1966: 553-559), Rice (1970: 44-45), Gowan and Bruch (1971: 17-22), Brackenbury (Gibson and Chennells 1976: 73-87), the guide compiled by Human Individual Potentialities (1977: 34-35), Perrone, Karshner and Male (Colangelo and Zaffran 1979: 70-80), Painter (1980: 16-22), Haasbroek and Jooste (1981: 37-45) and Khatena (1982: 85-103). The criteria listed here can be used for identification purposes UNTIL SUCH TIME AS THE NECESSARY STANDARDISED MEDIA HAVE BEEN DEVELOPED. These criteria also permit observation by parents and teaching staff, an aspect that will be discussed more fully in subsequent sections. It should be stressed again that specifically gifted pupils will not satisfy all the criteria mentioned. Guidelines in this regard will be supplied in subsequent sections of this report. Although different categories of gifted pupils are distinguished, the distinction should not be considered watertight since demarcation is sometimes perforce arbitrary. Often gifted pupils will manifest their talents in more than one category of giftedness.

3.4 PROCEDURES AND MODELS FOR THE IDENTIFICATION OF GIFTED PUPILS

3.4.1 Introduction

It emerged in earlier sections of this report that giftedness can manifest itself in different ways and that different categories of gifted pupils can be distinguished within the definition of giftedness. Identification procedures and models should allow for this. *Intellectually and specifically gifted pupils* should therefore be isolated by means of identification procedures and models, but it is equally important that *gifted underachievers and culturally dissimilar gifted pupils* should not be overlooked in the process. It can therefore be postulated that identification procedures and models should be capable of identifying the following distinct groups of gifted pupils:

- Intellectually gifted pupils
- Specifically gifted pupils
- Gifted underachievers
- Culturally dissimilar gifted pupils

The proposed identification procedures and models are intended to achieve this aim. Although they focus mainly on the identification of intellectually gifted pupils, provision is made for the other groups as well. It is very important, however, that where at all possible, *all* groups should undergo the full identification procedure since this will provide valuable information about education provision for these pupils. Obviously the criteria will vary somewhat from group to group.

3.4.2 Model for the identification of gifted pupils

Recommendation: It is recommended that the following models be implemented for the identification of gifted pupils in the preprimary, primary and secondary school.

(1) Phase 1: Orientation of all parties, introducing the project and disseminating information

(a) The panel of evaluators

The school co-ordination committee: gifted pupils should nominate the panel of evaluators who will deal with the identification of gifted pupils. At the meeting, the panel of evaluators should attend to such matters as the following:

- Availability of experts to serve on the panel
- Provisional identification of ad hoc members to be involved in the activities of the panel
- The most apposite approach to identification in terms of the local situation
- Functions to be fulfilled by the various panel members
- Planning and implementation of the entire identification procedure

(b) Appropriate guidance on giftedness for pupils, parents and teaching staff

Where there is ignorance or a negative attitude towards giftedness among the pupils, parents and teaching staff in a community, one cannot expect any project for gifted pupils to meet with success. Appropriate guidance on giftedness for pupils, parents and teachers is therefore extremely important. It can be provided in various ways, for instance:

- Supplying pupils, parents and teaching staff with information brochures

- Parents' meetings at school to discuss the subject

- Short training courses to orient teachers about the subject

This is a vital matter and one of the more important parts of the identification procedure.

(c) Information for parents concerning intellectually gifted pupils

An information brochure on the personality and learning attributes of intellectually gifted pupils should be circulated to all the parents concerned. The document should also provide information on the characteristics of gifted pupils with exceptional creative ability. In this regard, the attached addenda can be used:

ADDENDUM A INFORMATION SHEET 1 Information sheet for parents concerning intellectually gifted pupils

ADDENDUM F INFORMATION SHEET 6 Information sheet for parents and teaching staff concerning gifted preprimary pupils

(d) Information for teaching staff concerning intellectually gifted pupils

An information brochure on the personality and learning attributes of intellectually gifted pupils should be circulated to all members of the teaching staff. The document should also provide information on the characteristics of gifted pupils with exceptional creative ability. In this regard, the attached addenda can be used:

ADDENDUM B INFORMATION SHEET 2 Information sheet for teaching staff concerning intellectually gifted pupils

ADDENDUM F INFORMATION SHEET 6 Information sheet for parents and teaching staff concerning gifted preprimary pupils

(e) Information for parents and teaching staff concerning gifted underachievers

The identification of gifted underachievers is a highly problematic affair, but if the identification procedure misses such pupils, *it has to a large extent failed in its purpose.* The first step should be to compile and send an information brochure to parents and teaching staff concerning gifted underachievers. In this regard the attached addendum can be used:

ADDENDUM C INFORMATION SHEET 3 Information sheet for parents and teaching staff concerning gifted underachievers

This information brochure need not be supplied to parents of preprimary pupils.

(f) Information for parents and teaching staff concerning specifically gifted pupils

Information on the personal and learning attributes of specifically gifted pupils should be circulated to all teaching staff and the parents concerned. In this regard the attached addendum can be used:

ADDENDUM D INFORMATION SHEET 4 Information sheet for parents and teaching staff concerning specifically gifted pupils

Since ADDENDUM F contains sufficient information on the subject, Information Sheet 4 need not be supplied to parents of *preprimary pupils*.

(g) Information for teaching staff concerning culturally dissimilar gifted pupils

As in the case of gifted underachievers, the identification of culturally dissimilar gifted pupils is a problematic affair, since it is very easy to miss them in the identification procedure. For this reason it is imperative that teaching staff receive an information sheet on culturally dissimilar gifted pupils.

In this regard the attached addendum can be used:

ADDENDUM E INFORMATION SHEET 5 Information sheet for teaching staff concerning culturally dissimilar gifted pupils

(h) Parents' meetings at school

In many schools in the RSA it is common practice for parents to pay an organised visit to the school, in the course of which they are informed about and given an opportunity to discuss school affairs. The subject of giftedness should be discussed at such meetings so that parents can clarify any obscure points in this regard.

(i) Résumé

The preceding paragraphs and the relevant addenda indicate that Phase 1 is designed to serve as a general orientation, introducing the project and disseminating information to everyone concerned.

Hence the concern is primarily to provide guidance and form positive attitudes. By thus harnessing the services of a large group of "identifiers", it becomes far less likely that gifted pupils will be overlooked in the identification procedure. In addition it is *important* that parents should be involved, and *remain* involved, in the identification procedure. This means that a large part of the community will be involved and that such involvement will be transmitted to the community at large, possibly even activating formal cultural organisations in this regard.

The *importance of this phase in the identification procedure cannot be overemphasised,* since its success largely determines that of subsequent phases. It is essential to generate enthusiasm for the project, and skilful implementation of this phase should achieve just that.

(2) Phase 2: Preliminary identification of gifted pupils

(a) Structured observation by parents and teaching staff

Structured observation of possibly gifted pupils will stem from the information disseminated during Phase 1. Such observation should be conducted with the aid of the checklists contained in the following addenda:

ADDENDUM G CHECKLIST 1 Structured observation by parents: identification of possibly gifted pupils by means of a checklist

ADDENDUM H CHECKLIST 2 Structured observation by teaching staff: identification of possibly gifted pupils by means of a checklist

ADDENDUM J CHECKLIST 4 Structured observation by teaching staff: identification of possibly gifted preprimary pupils by means of a checklist

ADDENDUM K CHECKLIST 5 Structured observation by parents: identification of possibly gifted preprimary pupils by means of a checklist

These checklists give some indication of cut-off points and procedures.

(b) Structured observation by the peer group

Because of the importance some researchers attach to such observation, it is proposed that it should be incorporated into the identification procedure. This can be done by means of the following addendum:

ADDENDUM I CHECKLIST 3 Structured observation by peer group: nomination of possibly gifted pupils by means of a checklist

Such observation should be confined to the senior primary school standards and to the secondary school.

(c) Nomination of possibly gifted pupils

Because of the importance many researchers attach to the nomination of possibly gifted pupils, such nomination is given considerable prominence in the identification procedure. This method reduces the likelihood that gifted pupils will be overlooked since it enlists the help of a wide variety of observers. Objections to the method are largely overcome by the fact that nomination is not conducted haphazardly but it is based on the information sheets contained in ADDENDA A, B, C, D, E and F which provide parents and teachers with guidance. Nominations are moreover done on a structured basis with reference to ADDENDA G, H, I, J and K.

Although nominations obtained by these means should on the whole be accurate, it needs to be stressed that the checklists are as yet UNSTANDARDISED and should be seen as PROVISIONAL.

1) Nomination of possibly gifted pupils by their parents

These nominations are made with reference to ADDENDA G and K.

2) Nomination of possibly gifted pupils by teaching staff

These nominations are made with reference to ADDENDA H and J.

3) Nomination of possibly gifted pupils by the peer group

These nominations are made with reference to ADDENDUM I.

4) Nomination of possibly gifted pupils by bona fide institutions or persons

Although such nominations will be comparatively rare, the identification procedure should allow for them: there is always a possibility that some gifted pupils will manifest their talents outside the school or home context. No specific method is proposed in this regard since local circumstances can vary to such an extent that uniformity is impossible. However, members of the panel of evaluators should be aware of pupils' organised activities outside the school context and should contact the parties or institutions concerned to obtain information about possibly gifted pupils. Information obtained by means of ADDENDUM M, BIOGRAPHICAL QUESTIONNAIRE should be useful in this regard.

5) Procedure for handling nominations by the panel of evaluators

* The panel of evaluators receives all nominations of possibly gifted pupils.
* LIST A: NOMINATED POSSIBLY GIFTED PUPILS is then compiled
* A pupil's name may not be omitted even if he has been nominated by only one person.
* Any member of the panel may, at his discretion, add to the list the name of a pupil not otherwise nominated.
* At this stage none of the nominated names may be omitted.
* LIST A should also indicate the particular category (or categories) of giftedness for which a pupil was nominated, as well as pupils nominated as gifted underachievers or culturally dissimilar. The checklists allow for such nominations.

(d) Incorporation of other media and criteria into the identification procedure

According to the literature a certain percentage of nominated possibly gifted pupils (as per LIST A) will not be *truly gifted,* and not *all truly gifted pupils* will have been nominated. In all probability a fairly large percentage of pupils will have been accurately nominated, a smaller percentage will have been erroneously nominated and a small percentage of truly gifted pupils will have been overlooked.

Consequently other media and criteria should be incorporated into the identification procedure.

1) Cumulative scholastic achievement

a) Primary and secondary school pupils

The panel of evaluators now compiles LIST B: NOMINATION PLUS SCHOLASTIC ACHIEVEMENT. This list contains the names of all nominated possibly gifted pupils (LIST A), plus those whose cumulative scholastic achievement exceeds the 69th percentile (of the standard or group). This implies adding the names of the 30 per cent top scholastic achievers in the standard or group to LIST A in order to produce LIST B. In practice it will be found that the names of the majority of top performers will already have been included in LIST A.

b) Preprimary pupils

Obviously there will be no cumulative scholastic achievement records for preprimary pupils as there are for primary and secondary school pupils. However, indications of giftedness may often be observed in the creations and achievements of gifted preprimary pupils in the course of ordinary school activities. Exceptionally advanced creations may also be produced independently at home. Here the teacher's observations are particularly important for the identification of giftedness. It is also important for preprimary teaching staff to liaise with parents in this connection. Observation by teaching staff may result in the discovery of for example a young artist, potter, mathematician or oboist.

Some preprimary pupils are patently gifted and easily identifiable, but for others there is no simple identification procedure. In the case of the latter, the maintenance of an ongoing pedogram of every pupil is a pedagogically sound approach.

The names of possibly gifted preprimary pupils who distinguish themselves through exceptionally advanced creative work can be added to LIST A to constitute LIST B.

(c) The use of a scholastic proficiency battery

In some education systems in the RSA, regular completion of standardised scholastic achievement tests/proficiency batteries is part of the normal psychological/educational evaluation programme. Where this is the case, the results should be used in the identification procedure as a means of *verifying* the cumulative scholastic achievement. It is therefore unnecessary to incorporate these tests into the identification procedure on a grand scale, *except in instances where the actual scholastic standard of pupils is questionable.*

2) Group intelligence tests

It has been pointed out elsewhere in this report that pupils with *reading problems* usually do not fare as well as they ought to in group intelligence tests. In other words, the results of such tests (and certain other group tests) represent an *underestimation* of these pupils' actual intellectual capacity. This applies particularly to gifted underachievers and culturally dissimilar gifted pupils. Hence before employing group intelligence tests, the names of all pupils on LIST B should be checked, class and subject teachers should be consulted and expert aid should be obtained from the psychological/educational auxiliary services to establish the presence of any *pupils with reading problems* in the group to be evaluated. Often such pupils are already known to their class and subject teachers and members of the psychological/educational auxiliary services. Should expert evaluation indicate that a given possibly gifted pupil in fact has reading problems, the pupil should on no account be evaluated by means of group intelligence tests; instead the panel should rely on individual tests.

The next step is for pupils whose names appear on LIST B to undergo a group intelligence test. In secondary school it is usually not necessary to administer group intelligence tests specifically for purposes of identification, since test scores for most pupils should be available already. Should the available IQs not come up to the expectations raised by the nomination procedure and cumulative scholastic achievement, such pupils should *not* be excluded but must be re-evaluated. Note, however, that the identification of gifted pupils should not be delayed or suspended to fit in with the normal psychometric evaluation programmes of the school.

Obviously group intelligence tests will not be administered to preprimary or junior primary pupils. Since at this stage suitable group intelligence tests are not available for all population groups in the RSA, it is essential that such tests be developed. Until such time as this has been done, great reliance will have to be placed on aptitude tests. Procedures in this regard will be discussed later in this report.

(e) **Résumé**

At this stage of the identification procedure, the panel of evaluators has the following at its disposal:

- LIST B, containing the names of possibly gifted pupils
- Cumulative scholastic achievement/results of standardised scholastic achievement tests/proficiency batteries
- Results of group intelligence tests
- In the case of certain pupils, the results of reading tests
- The names of possibly gifted underachievers and culturally dissimilar gifted pupils
- The names of possibly specifically gifted pupils
- A wide variety of information about the personal and learning attributes of nominated gifted pupils, obtained through structured observation by parents, teaching staff and peer group

It is recommended that the collected data on possibly gifted pupils be kept in a special file created for each individual pupil. This file should be systematically updated so that the information can be used for the eventual compilation of a personal profile, to be discussed later in this report. Obviously the information in this file should be treated as *highly confidential* and should not be released to unauthorised persons.

(3) Phase 3: Intensive identification of gifted pupils

(a) Intensive identification of certain gifted pupils

At this stage of the identification procedure, certain intellectually gifted pupils can already be considered to have been intensively identified.

These are pupils who, in the group intelligence tests used, exceed the 94th percentile in terms of national norms (i.e. who have an IQ of around 125) and whose scholastic achievement, as reflected in cumulative scholastic achievement/standardised scholastic achievement tests/proficiency batteries, exceeds the 89th percentile in terms of local norms. As mentioned previously, such intensive identification does not exclude the pupils concerned from further evaluation. In this chapter it has been pointed out that group intelligence tests should not be used for intensive identification of gifted pupils. Objections to this practice are valid, since these tests could overlook a large percentage of gifted pupils. The proposed method of implementation largely overcomes these objections since group intelligence tests are administered in such a way that gifted pupils are in fact included. In the case of coloured pupils, however, group intelligence tests will have to be used due to the lack of suitable individual tests.

As already stated, some researchers feel that the abovementioned cut-off point should not be defined in a rigid way but should be adjusted in accordance with local requirements. It should be remembered that a pupil's score in intelligence tests indicates his minimum potential at that particular time. A PUPIL SHOULD NEVER BE EXCLUDED ON THE STRENGTH OF ONE OR TWO IQ POINTS.

In view of the relatively high but imperfect correlation between IQ and scholastic achievement, it may be advisable to adjust the cut-off point for scholastic achievement slightly downwards, which is why this report proposed the 89th percentile as a cut-off point. The importance of this criterion justifies a certain prominence in the identification procedure.

The above method makes it possible to conduct the intensive identification of certain intellectually gifted pupils in a comparatively simple, straightforward way. Thus evaluation by means of individual intelligence tests is restricted without lapsing into unscientific or pedagogically unjustified procedures.

(b) Incorporation of further media and criteria

At this stage of the identification procedure some of the pupils whose names appear in LIST B have already been intensively identified as intellectually gifted. These names may now be removed from LIST B, which will then consist of

- possibly intellectually gifted pupils,
- possibly specifically gifted pupils,
- possibly gifted underachievers, and
- possibly gifted culturally dissimilar pupils.

These pupils should now be intensively identified.

1) Individual intelligence tests

a) Intensive identification of intellectually gifted pupils

The intellectual capacity of *all* pupils whose names are left on LIST B should now be tested by means of individual intelligence tests.

All possibly gifted pupils whose scores in these tests exceed the 94th percentile, and who exceed the 89th percentile in terms of local norms in cumulative scholastic achievement/standardised scholastic achievement tests/proficiency batteries, can be considered intensively identified intellectually gifted pupils.

LIST C: INTENSIVELY IDENTIFIED INTELLECTUALLY GIFTED PUPILS can now be compiled. It will consist of this last group as well as pupils previously identified (see Par. 3.4.2.(3)(a)).

With regard to the proposed cut-off points, the panel of evaluators should adopt a flexible attitude, and no pupil should be excluded on account of one or two points.

b) Résumé

At this stage the panel has at its disposal LIST B, comprising all possibly gifted pupils,and LIST C, comprising all intensively identified intellectually gifted pupils. If all the names on LIST C are eliminated from LIST B, the remaining names on the latter will consist of

- mistakenly nominated possibly intellectually gifted pupils
- possibly specifically gifted pupils
- possibly gifted underachievers
- possibly gifted culturally dissimilar pupils

After careful, responsible deliberation by the panel, the names of mistakenly nominated possibly intellectually gifted pupils should now be removed from LIST B. Where there is any *doubt* about the removal of a name, the pupil concerned should be considered for *further evaluation or even for re-evaluation.* Particular care should be taken that possibly gifted underachievers and possibly gifted culturally dissimilar pupils are not overlooked in the identification procedure.

c) Intensive identification of gifted underachievers

For the purposes of this report, gifted underachievers are defined as pupils who possess exceptional intellectual and other personal potential which for some reason(s) they fail to realise. In terms of this definition, gifted underachievers can be identified on the basis of a disparity between actual and expected scholastic achievement. Hence they would be those pupils on LIST B whose intellectual capacity exceeds the 94th percentile (i.e. with an IQ of about 125 or more according to *individual intelligence tests*) but who are average or below average in terms of cumulative scholastic achievement/standardised scholastic achievement tests/proficiency batteries. Using statistical techniques, this disparity between expected and demonstrated scholastic achievement can be described very accurately, but for the purposes of this report, the abovementioned guidelines are considered adequate. Attention should be paid to the acuteness of the pupil's problem and whether it is chronic or of a passing nature.

From the preceding sections it is evident that intellectual capacity and actual scholastic achievement feature prominently in the identification procedure. Such an approach is open to criticism but it is supported by many researchers, including Shaw and Brown (1957: 195-196), DeHaan (1963: 102), Gowan (Crow and Crow 1963: 215), Norfleet (1968: 977), Gallagher (1975: 341), Newland (1976: 91), Clark (1979: 279), Haasbroek and Jooste (1981: 49) and Whitmore (1980-81: 366-367).

Since not only intellectual and scholastic factors influence underachievement by gifted pupils, it is suggested that a case history should form part of the identification procedure. In this regard ADDENDUM M BIOGRAPHICAL QUESTIONNAIRE may be useful.

According to Clark (1979: 280-281), the following additional criteria can be used:

- Underachievers have a poor self-image, tend to evaluate themselves negatively and suffer from marked feelings of inferiority manifested as mistrust, lack of interest and involvement and hostility.
- They feel rejected by their families and believe that their parents are dissatisfied with them.
- They are hostile towards authority figures and mistrust adults.
- They feel wronged.
- They hate school and teachers and pick friends who share their attitudes.
- They may appear rebellious.
- Their work motivation is extremely poor and they may be scholastically backward.

- Their study methods are often defective, they do little homework and often fall asleep when they should be studying.

- They have little perseverance or self-assertiveness and in the class situation they tend to withdraw.

- They do not usually occupy leadership positions and are not very popular with the peer group.

- They are less mature than achievers, for instance they lack self-discipline, are unwilling to perform tasks and tend to put them off, their attention fluctuates, they act impulsively and irresponsibly and are unwilling to face up to unpleasant situations.

- They are poorly adjusted.

- They have few hobbies and are therefore often idle.

- They do not have high ideals and are unsure about their career choice.

- Their eventual choice of a career is often not compatible with their actual interests and abilities.

Intensive identification of gifted underachievers does not preclude further evaluation, which may well indicate the nature of their problem and the degree of therapeutic assistance they require. These pupils cannot possibly be placed directly in a group receiving educational programmes for gifted pupils. They badly need therapy and should first receive the necessary remedial and therapeutic assistance before being admitted to programmes for gifted pupils.

After admission, their progress should be carefully monitored so that follow-up action may be taken when required.

The panel of evaluators can now proceed to compile LIST D: INTENSIVELY IDENTIFIED GIFTED UNDERACHIEVERS.

2) Aptitude tests

At this stage of the identification procedure, the panel of evaluators should remove the names of intensively identified gifted underachievers from LIST B, leaving them with

- LIST B, containing the names of possibly specifically gifted pupils and possibly gifted culturally dissimilar pupils,

- LIST C, containing the names of all intensively identified intellectually gifted pupils,

- LIST D, containing the names of all intensively identified gifted underachievers.

All these pupils should now complete an aptitude test battery.

In some education systems, aptitude test battery results for secondary school pupils will be *available* since in these systems it is customary to evaluate all Standard 5 and Standard 7 pupils by means of such tests. Where these results are available, they should be used in the identification procedure, but the panel should evaluate them. If there is any doubt as to their validity and reliability, the pupils should be re-evaluated.

Since at this stage of the identification procedure the panel of evaluators has the names of intellectually gifted pupils and gifted underachievers at its disposal, it is suggested that it proceeds to compile a personal profile of each identified gifted pupil with the aid of ADDENDUM N PERSONAL PROFILE OF THE GIFTED PUPIL. The addendum should be placed in the pupil's file along with all other relevant information.

a) Procedure for black pupils

At this stage media for evaluating the intellectual capacity of blacks are not readily available in the RSA. For the time being, aptitude tests will therefore have to be used for this purpose, although this is not an entirely satisfactory arrangement.

With regard to the identification of intellectually gifted pupils, the aforementioned cut-off points for cumulative scholastic achievement/standardised scholastic achievement tests/proficiency batteries are applicable.

Intellectually gifted pupils can then be identified as those who *predominantly* obtain stanines of 8 in aptitude tests and comply with the stated criteria for cumulative scholastic achievement/standardised scholastic achievement tests/proficiency batteries.

Gifted underachievers can be identified as those pupils who *predominantly* obtain stanines of 8 in aptitude tests, but whose performance in respect of cumulative scholastic achievement/standardised scholastic achievement tests/proficiency batteries is below average or average.

From the foregoing it is evident that the development of suitable intelligence tests for blacks should be given priority.

3) Identification of specifically gifted pupils by means of special tests and criteria

a) Cut-off points for the tests used

Earlier in this report an IQ cut-off point of 120 (round about the 90th percentile) was recommended, but this will not apply to all categories of specifically gifted pupils. The matter will be clarified further in the ensuing sections.

(i) Exceptional aptitude, interest and ability (proficiency) with regard to a specific academic field

Here the following criteria and cut-off points are applicable:

- Exceptional interest in the relevant academic field, as evaluated by means of interest questionnaires.
- A stanine score of at least 8 for aptitude for the academic field in question, as evaluated by means of aptitude tests.
- Strong work motivation, correct study methods and a positive attitude towards study, as evaluated by means of such media as the Survey of Study Habits and Attitudes (SSHA) Form H.
- Favourable evaluation by subject teachers of demonstrated achievement in this field.
- Cumulative scholastic achievement/standardised scholastic achievement/proficiency in this field in excess of the 89th percentile.

(ii) Exceptional creativity

Here the following criteria and cut-off points are applicable:

- Exceptional interest in creative activities, as evaluated by means of interest questionnaires.
- The majority of the traits, as evaluated by means of ADDENDUM L.
- Favourable expert evaluation of demonstrated creative ability as manifested in a specific field.
- Certain personality traits such as a positive self-image, capacity to be either conformist or non-conformist, spontaneity, self-sufficiency, marked venturesomeness and willingness to take risks, as evaluated by means of personality questionnaires/projection media.
- Possession of exceptional creative ability, as evaluated by means of the *High School Personality Questionnaire (HSPQ)* and the *Jung Personality Questionnaire (JPQ)*.

(iii) Exceptional leadership ability

Here the following criteria and cut-off points are applicable:

- Exceptional interest in activities involving people and in public performance, as evaluated by means of interest questionnaires.
- Possession of personality traits such as extroversion, a positive self-image, emotional stability, dominance, perseverance, vitality, self-sufficiency and a relaxed attitude, as evaluated by means of personality questionnaires/projection media.
- Positive interpersonal relations, as evaluated by means of media and observation.
- Expert confirmation of the presence of this specific gift.

- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.

- Above average cumulative scholastic achievement/standardised scholastic achievement/proficiency.

(iv) **Exceptional aptitude for and command of language and creative powers that could enable the pupil to develop into a prose writer or poet**

Here the following criteria and cut-off points are applicable:

- Exceptional interest in the above activities, as evaluated by means of interest questionnaires.

- Possession of exceptional creative ability, as evaluated by means of ADDENDUM L and other media.

- Exceptional linguistic aptitude, as evaluated by means of aptitude tests. Stanine score should be 8 or more.

- Favourable evaluation by language teachers and/or experts of demonstrated achievement in this field.

- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.

- Cumulative scholastic achievement/standardised scholastic achievement/proficiency in languages should exceed the 89th percentile.

(v) **Exceptional talent for acting, writing or producing dramas**

Here the following criteria and cut-off points are applicable:

- Exceptional interest in these activities, as evaluated by means of interest questionnaires.

- Possession of exceptional creative ability, as evaluated by means of ADDENDUM L and other media.

- Exceptional linguistic aptitude, as evaluated by means of aptitude tests. Stanine score should be 8 or more.

- Favourable evaluation by experts of demonstrated achievement in this field.

- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.

(vi) **Exceptional rhetorical ability**

Here the following criteria and cut-off points are applicable:

- Exceptional interest in rhetorical activities, as evaluated by means of interest questionnaires.

- Possession of exceptional creative ability, as evaluated by means of ADDENDUM L and other media.

- Possession of such personality traits as dominance, spontaneity, vitality, self-assurance, a relaxed manner and adaptability, as evaluated by means of personality questionnaires/projection media.
- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.
- Above average cumulative scholastic achievement/standardised scholastic achievement/proficiency.

(vii) Exceptional talent for singing or music related to masterly performance or composition

Here the following criteria and cut-off points are applicable:

- Exceptional interest in these activities, as evaluated by means of interest questionnaires.
- Exceptional aptitude for music, as evaluated by means of aptitude tests. Expert assistance should be obtained in evaluating the results of these media, hence no cut-off point is recommended.
- Possession of exceptional creative ability, as evaluated by means of ADDENDUM L and other media.
- Exceptional achievement in this field according to expert evaluation.
- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.
- If the pupil takes music as a school subject, his cumulative scholastic achievement should be in excess of the 89th percentile.

(viii) Superior ability, interest and motor and rhythmic skills for performing art forms such as ballet and expressive dancing

Here the following criteria and cut-off points are applicable:

- Exceptional interest in these activities, as evaluated by means of interest questionnaires.
- Exceptional interest in music, as evaluated by means of interest questionnaires.
- Aptitude and musical ability according to expert evaluation.
- Demonstrated achievement in this field according to expert evaluation.
- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.

(ix) Superior artistic talent for the creative arts

Here the following criteria and cut-off points are applicable:

- Exceptional interest in these activities, as evaluated by means of interest questionnaires.
- Possession of personality traits such as sensitivity, individualism, perseverance and self-confidence, as evaluated by means of personality questionnaires/projection media.
- Possession of exceptional creative ability, as evaluated by means of ADDENDUM L and other media.
- Aptitude in this field according to expert evaluation.
- Demonstrated achievement in this field according to expert evaluation.
- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.
- If the pupil takes art as a school subject, his cumulative scholastic achievement should be in excess of the 89th percentile.

(x) **Superior aptitude and dexterity in respect of mechanical or other design**

Here the following criteria and cut-off points are applicable:

- Exceptional interest in these activities, as evaluated by means of interest questionnaires.
- Exceptional aptitude for the mechanical and technical fields, as evaluated by means of aptitude tests. Stanine scores should be 8 or more.
- Exceptional interest in Mathematics and the natural sciences, as evaluated by means of interest questionnaires.
- Exceptional aptitude for figures and the natural sciences, as evaluated by means of aptitude tests.
- Possession of exceptional creative ability, as evaluated by means of ADDENDUM L and other media.
- Demonstrated achievement in this field according to expert evaluation.
- Compliance with the majority of the other criteria mentioned in Par. 3.3.4.
- Cumulative scholastic achievement/standardised scholastic achievement/proficiency in the natural sciences, Mathematics and technical subjects in excess of the 89th percentile.

(xi) **Superior kinesthetic (psychomotor) ability**

Here the following criteria and cut-off points are applicable:

* Exceptional interest in these activities, as evaluated by means of interest questionnaires and manifested in enthusiastic participation.

* Exceptional aptitude in this field according to expert evaluation.

* Demonstrated achievement in this field according to favourable expert evaluation.

* Compliance with the majority of the other criteria mentioned in Par. 3.3.4.

* Exceptional achievement in this field, such as earning sporting colours, breaking records and participating in provincial, national and other competitions.

* No cut-off point is specified for intellectual capacity.

(c) Résumé

The problems attached to the identification of specifically gifted pupils are such that the panel of evaluators should EXERCISE THE GREATEST CIRCUMSPECTION AND WISDOM. Thus the results of one particular medium should never be seen as absolute. All information about specifically gifted pupils should be viewed against the background of their total personalities. EVALUATION OF DEMONSTRATED ACHIEVEMENT BY A PUPIL IN A SPECIFIC FIELD SHOULD BE DECISIVE IN IDENTIFICATION, while the other criteria and media mentioned should be regarded purely as *pointers* to possible specific giftedness. For this reason no effort should be spared to second experts to the panel to evaluate demonstrated achievement by pupils.

At this stage of the identification procedure the panel of evaluators can proceed to compile LIST E: INTENSIVELY IDENTIFIED SPECIFICALLY GIFTED PUPILS. These names can now be removed from LIST B.

The panel of evaluators now has the following at its disposal:

* LIST C: INTENSIVELY IDENTIFIED INTELLECTUALLY GIFTED PUPILS
* LIST D: INTENSIVELY IDENTIFIED GIFTED UNDERACHIEVERS
* LIST E: INTENSIVELY IDENTIFIED SPECIFICALLY GIFTED PUPILS

The panel can also start completing ADDENDUM N for each individual specifically gifted pupil. The addendum should be placed in the pupil's file.

Names of erroneously nominated possibly specifically gifted pupils can be removed from LIST B.

(d) Intensive identification of culturally dissimilar gifted pupils

1) Introduction

The above identification procedure and models permit the identification of gifted pupils from the various population groups in the RSA. It would seem that for some population groups at any rate there are as yet insufficient psychometric media, although suggestions are made on how to overcome the problem for the time being. Hence it could be postulated that the proposed models for the identification of gifted pupils make some allowance for cultural differences between population groups in the RSA.

It would be a mistake, however, to regard every population group in the RSA as homogeneous. Thus one finds that even *within* a given cultural context there are individuals or groups who *differ* from the dominant culture under which they are grouped and are therefore distinctive. *For the purposes of this discussion culturally dissimilar gifted pupils are considered to be those pupils who, as regards background, origin, language, values, attitudes and aspirations, differ from the dominant cultural group to such an extent that it affects the manifestation of their giftedness.*

The following examples will illustrate the point:

- Pupils whose home language is not the same as the language medium of the school they attend or the community in which they live.
- Pupils from a poor socioeconomic background who find themselves in a more favourable environment (for instance, by becoming boarders).
- Pupils who belong to a particular group (e.g. miners, migrant labourers, construction workers) which could virtually be described as a subculture.
- Pupils whose values, attitudes, aspirations and norms differ drastically from those of the community owing to the influence of their parents as primary educators.
- Pupils residing in remote, isolated rural areas where there is little culturally enriching stimulation.
- Pupils from culturally deprived homes or environments.

Such pupils may manifest cultural dissimilarity which detrimentally affects the manifestation of giftedness. It should be noted, therefore, that the manifestation of giftedness is affected not only by membership of a particular population group but even by factors *within* that group.

2) Identification

The literature provides no clear guidelines for identification procedures for culturally dissimilar gifted pupils. Tannenbaum (1983: 353) points out that the identification of such pupils poses one of the knottiest problems of all. Nonetheless certain trends emerge from the literature.

In the guide compiled by Human Individual Potentialities (1977: 30) it is mentioned that the manifestation of intellectual ability in culturally dissimilar gifted pupils is often impeded by environmental factors, marked affective insecurity (due to cultural differences and conflict), and deficient opportunities, both at home and in the community, for the optimal development of ability. These circumstances often cause pupils to underachieve at school. Martinson (1978: 106) makes the important point that if the teacher assumes a particular pupil to be incapable of high-level achievement (which may well happen in the case of culturally dissimilar gifted pupils), he will not give the pupil the necessary opportunity. Thunberg (Miller and Price 1981: 51) says much the same thing when he observes that a teacher's positive expectations with regard to a pupil have the effect of improving the intellectual functioning of the latter. In this regard Jordaan, Jordaan and Nieuwoudt (1975: 788) cite an illuminating study by Rosenthal and Jacobson in which teaching staff were informed that there were twenty bright pupils with high IQs in a particular class. In due course the scholastic performance of these pupils, who in fact had average IQs, *improved dramatically* and their IQs *increased.* The improvement can in all probability be ascribed to the *teachers' positive expectations.* One could speculate on the consequences of negative expectations on the part of teachers with regard to certain pupils. The words of Goethe, quoted by Jordaan, Jordaan and Nieuwoudt (1975: 788), may clarify the issue: "If one treats a person as if he were what he ought to be and could be, he will become what he ought to be and could be." If one bears in mind that the information available to teachers very often represents an *underestimation* of the potential of culturally dissimilar gifted pupils, the foregoing has far-reaching implications for these pupils.

With reference to the USA, Martinson (1978: 100) maintains that such pupils are present in every community and ethnic group. Gallagher (Crow and Crow 1963: 40-41) comments thus: "The teacher should not dismiss the possibility that a child could possess intellectual gifts even if he wears poor or inadequate clothing, or comes from a slum, or has parents who never attend PTA meetings." The same author (1966: 237) also writes: " ... intellectual talent flourishes everywhere. It can be found in children of every race, creed, and nationality." Although overseas views on culturally dissimilar gifted pupils are not always entirely applicable to the situation in the RSA, one may nonetheless assume that such pupils can occur among all population groups in the country, that in view of the heterogeneity of the population, the incidence may well be considerable and that in the identification procedure researchers will have to take this group of gifted pupils into account.

It has been mentioned that the literature is not very clear on the identification of culturally dissimilar gifted pupils. Gallagher (1975: 385), Tongue and Sperling (1976: 2), Martinson (1978: 44), Clark (1979: 126), Renzulli (quoted in Harrington 1982: 115), Wallace (1982: 5), Hewett and Forness (quoted in O'Neill and Scollay 1983: 12), Ryan (1983: 155) and Taylor (1984: 68-71) all refer to the limitations of conventional intelligence tests for this purpose. Cultural dissimilarity is often manifested in *linguistic* backwardness among these pupils. Probably because traditional intelligence tests rely heavily on verbal factors, Renzulli (quoted in Harrington 1982: 115) concludes that when IQ features too prominently in the identification procedure, the culturally dissimilar gifted pupil may well be overlooked. In this connection researchers such as Newland

(1976: 201), Karnes and Collins (1981: 8) and Ryan (1983: 155) stress the importance of using non-verbal media. Martinson (1978: 108), however, quotes Anastasi as saying that some of the so-called non-verbal media are neither culture-free nor culture-fair.

Hence the researcher faces a dilemma: cultural factors influence the manifestation of giftedness, while the available media are subject to those same factors. Schwartz (1983: 24) moreover points out that in the USA the traditional ways of evaluating gifted pupils are aimed mainly at the white, unilingual, English-speaking middle income group. Clearly such an approach would imply that large numbers of culturally dissimilar gifted pupils are overlooked. According to Clark (1979: 127), reseachers tend to set great store by the use of non-intellectual criteria in the identification procedure, with the accent on criteria for evaluating creative ability in particular. Clark finds this approach debatable, since these criteria are not used for the identification of gifted pupils generally. However, he cites a number of promising studies in this regard (Clark 1979: 127-128):

* Bruch produced an amended version of the Stanford-Binet intelligence test *(The Abbreviated Binet for Disadvantaged (ABDA))*, about which there have been positive reports.

* Malone and Malone and Moonan found that gifted kindergarten pupils (as well as culturally dissimilar gifted pupils) can be identified on the basis of behavioural characteristics.

* Teachers have found that mathematics scores in standardised tests appear to be affective for predicting success in special educational programmes for gifted pupils.

* Gear managed to improve teachers' effectiveness in identification through special training programmes.

Ryan (1983: 155) established that intelligence tests relying mainly on non-verbal factors are effective for identification. He found, however, that the *Goodenough Draw-A-Man (DAM)*, which is highly rated as an identification criterion by some, is not efficacious, while nomination of possibly gifted pupils by teaching staff is a useful but not completely adequate method. This researcher also found that information about possibly gifted pupils obtained from parents is particularly useful in the identification procedure and that nomination of such pupils by the peer group shows promise. Studies cited by Tannenbaum (1983: 353-354) indicate that possibly gifted culturally dissimilar pupils do not differ much from other gifted pupils in respect of non-intellectual attributes, so that these latter could be used as criteria in the identification procedure. Rosenberg (quoted by Gowan and Bruch 1971: 78) claims that a fast rate of learning among disadvantaged pupils could be indicative of high intellectual capacity despite a low IQ. Torrance (1984: 155-156) maintains that in identifying culturally dissimilar gifted pupils, the procedure should include test tasks which highlight exceptional achievements that are highly rated by the particular cultural group or subculture. Both Martinson (1978: 115) and Renzulli et al.

(quoted in Harrington 1982: 115) emphasise the need for comprehensive *individual investigations*. Renzulli *et al*. advocate a type of case study approach.

According to Gallagher (1975: 379-380), Bruch proposes the following criteria for the identification of culturally dissimilar gifted pupils:

1. The primary identification criterion should be that a child exhibits outstanding powers in one or more abilities valued by his culture; the degree to which he manifests these abilities should be related both to national and to local cultural norms.

2. The secondary criterion would be that applicable to the usual identification tests, he should measure on national norms on both ability and achievement approximately at "bright average" levels or better.

3. A special consideration should be given to those children with demonstrated creativity.

4. Children who show social leadership potentials should also be given special consideration as having a quality strengthening their identification as gifted.

Although the foregoing pertains mainly to the situation in the USA, it permits inferences relevant for the purposes of this report:

- Since group intelligence tests rely heavily on verbal factors and reading ability plays a major part in these tests, their use in the identification of culturally dissimilar gifted pupils is not recommended.

- Intelligence tests should not feature too prominently in the identification procedure.

- Wherever possible, non-verbal media should be used, or the non-verbal sections of tests such as individual intelligence or aptitude tests.

- An individual approach should be adopted in the identification procedure.

- Criteria based largely on non-intellectual factors, such as nominations, biographical data and personality traits, should be used in the identification procedure.

- Possession of leadership potential and creative ability should be seen as indicators of possible giftedness.

- Depending on the circumstances, cut-off points for intellectual capacity and scholastic achievement should be adjusted downward.

a) Relevant procedure for this report

At this stage of the identification procedure, the following measures have already taken place in the identification of culturally dissimilar gifted pupils.

* ADDENDUM E, which provides teachers with information about culturally dissimilar gifted pupils, has been distributed.

* Nominations based on ADDENDA G, H, I, J and K have been received.

* Information about cumulative scholastic achievement/standardised scholastic achievement/proficiency is available.

* Results of individual (in some instances possibly group) intelligence tests and aptitude tests are available.

For the intensive identification of these pupils, the following procedure is suggested:

* The cut-off point for *cumulative scholastic achievement/standardised scholastic achievement/proficiency* should be adjusted downward to the 80th percentile.

* The cut-off point for intellectual capacity as evaluated by means of individual intelligence tests should be adjusted downward to the 85th percentile (an IQ of approximately 115) for intellectually gifted pupils and to the 75th percentile (an IQ of about 110) for specifically gifted pupils.

* Greater emphasis should be laid on non-verbal subtests of intelligence tests and aptitude tests.

* If *necessary*, the *Wiggly Block* should be used to evaluate practical intellectual capacity.

* ADDENDUM M: BIOGRAPHICAL QUESTIONNAIRE should be used to evaluate pupils in terms of their home environment.

* The reading ability of individual pupils should be evaluated by means of appropriate media with a view to therapeutic assistance.

* Possession of exceptional leadership and creative ability should be regarded as special indicators of giftedness.

The panel of evaluators can now proceed to compile LIST F: INTENSIVELY IDENTIFIED CULTURALLY DISSIMILAR GIFTED PUPILS and to complete ADDENDUM N in respect of each pupil for filing in his personal dossier. These pupils cannot be admitted directly to educational programmes for gifted pupils. According to Newland (1976: 201), Martinson (1978: 126) and Frasier (Miller and Price 1981: 56) they should first receive therapeutic assistance to overcome their backlog before being admitted to such programmes.

(e) Résumé

By the end of Phase 3, the panel of evaluators has the following at its disposal:

* LIST C: INTENSIVELY IDENTIFIED INTELLECTUALLY GIFTED PUPILS
* LIST D: INTENSIVELY IDENTIFIED GIFTED UNDERACHIEVERS
* LIST E: INTENSIVELY IDENTIFIED SPECIFICALLY GIFTED PUPILS
* LIST F: INTENSIVELY IDENTIFIED CULTURALLY DISSIMILAR GIFTED PUPILS

Completion of this phase concludes the identification of gifted pupils for admission to educational programmes for the gifted. The literature indicates, as mentioned earlier, that the main emphasis in the identification procedure should not be only on the cognitive attributes of these pupils. Since the aim of this report is to create an identification procedure and models for identification based on a *personal profile*, it will be necessary to obtain more information on identified gifted pupils. Owing to the close relation between the definition and categorisation of gifted pupils, their identification and education provision for them, the identification procedure should also indicate the *nature of the education provision*. Hence it should cast more light on these pupils' educational needs, thus necessitating further evaluation. Guidelines for this purpose are presented in Phase 4.

(4) Phase 4: Selective identification of gifted pupils

(a) Introduction

Treffinger (quoted in Rimm 1984: 182) makes the following significant comment on the identification procedure: "Identification isn't worth anything unless it has an impact on programming."

In the foregoing sections, it was pointed out that further information is required about each individual gifted pupil with a view to compiling a personal profile and determining the most appropriate education provision. At this stage of the identification procedure, however, the panel of evaluators possesses information chiefly about the pupils' cognitive characteristics. Tongue and Sperling (1976: 3) and Renzulli and Stoddard (1980: 2) agree that educational programmes for gifted pupils cannot be presented on such a narrow basis, which could well happen if the identification procedure were to be concluded at this stage.

In view of the above, it is not surprising that Newland (1976: 205) should stress the importance of collecting additional information about pupils. Stanley (Colangelo and Zaffran 1979: 110) concurs, expressing the view that attitudes, values, interests and personality traits are also determinants of success in special educational programmes for gifted pupils. Martinson and Lessinger (Gallagher 1966: 32) refer to the gifted pupil's need for individualised educational programmes, which obviously implies knowledge of each such pupil's needs.

FROM THE ABOVE ONE CAN CONCLUDE THAT PHASE 4 OF THE IDENTIFICATION PROCEDURE IS EXTREMELY IMPORTANT; THAT IT SHOULD BE TREATED AS SUCH; THAT IT HAS A DIRECT BEARING ON THE EFFECTIVENESS OF EDUCATION PROVISION FOR GIFTED PUPILS, AND THAT IT IMPARTS MEANING TO THE IDENTIFICATION PROCEDURE AS A WHOLE.

(b) Gathering additional information

By this stage the panel of evaluators has at its disposal a host of data about each intensively identified gifted pupil. A start has been made with systematically updating these data and recording them in accordance with ADDENDUM N. It is evident by now that gifted pupils do not constitute a HOMOGENEOUS group - in fact, they are as divergent as the community from which they come. They have one thing in common: they all possess qualities that enable them to perform outstandingly in various fields. They will differ, however, as regards intellectual capacity (even if their IQs are the same), aptitude, scholastic achievement, interests, personality traits, attitudes, motivation, conation, background, physical attributes and the like.

This report recommends that recommendations concerning the nature of education provision for gifted pupils should be left to the panel of evaluators. At this stage of the identification procedure, however, the panel is not yet in a position to make recommendations. To do so, it needs additional information.

1) Qualitative analysis of the results of intelligence tests

The limitations of intelligence tests have been pointed out elsewhere in this report. Many of the objections to the use of these tests, and problems attending the interpretation of results, can be obviated by proper qualitative analysis of these results.

Stanley (Colangelo and Zaffran 1979: 110-111) maintains that when giftedness is equated with high IQ, the latter becomes the basis for grouping pupils with a view to the provision of education. Then, when a pupil fails to make progress, it is attributed to poor motivation or lack of interest. This conclusion need not necessarily be correct, since a group of pupils of the same sex, mental age and IQ may differ greatly as regards their actual intellectual capacity and aptitudes. Two pupils with the same IQ may have obtained their IQ scores by different routes. Sonnekus (Nel, Sonnekus and Garbers 1965: 318) expresses much the same idea when he points out that a given IQ may be based on good quality performance, for instance strong language, thought, memory and number items. However, the same quotient may be based on poor quality in these items and better quality in action items, for example, which are more practical in nature. Accordingly it would be a grave error to place a particular gifted pupil in a programme for language instruction if he obtained exceptionally high scores in non-verbal items and scores less well on verbal items. Qualitative analysis of the results of intelligence tests may therefore be useful for the selective identification of gifted pupils.

Researchers such as Kohnstamm (quoted in Duminy 1963: 43), Sonnekus (Nel, Sonnekus and Garbers 1965: 318), Chorus (quoted in Engelbrecht 1973: 11) and Olivier (1983: 9) mention the need for attention to be given to the quality of a pupil's intellectual capacity. Chorus, for example, feels that IQ has purely relative value and can be fully understood only after qualitative analysis of the intelligence test as such and hence of the achievements on which the results are based. Sonnekus concurs with this when he describes qualitative analysis as a necessary supplement to the method of quantification so as to arrive at a more reliable evaluation of results.

Methods for qualitative analysis by means of certain individual intelligence tests are available in the RSA. Thus Venter (1983: 32-40) presents an adaptation of Slater's qualitative analytical table for the *Junior South African Individual Scale (JSAIS),* an evaluation technique suitable for identifying gifted preprimary pupils. Van Niekerk (1978: 89) cites Steenkamp's method for analysing intellectual capacity by means of the New South African Individual Scale (NSAIS) (Now the SSAIS). Van Niekerk (1978: 93-125) also presents a useful scheme of his own which he calls a pedagogically qualitative intelligence evaluation practice for the selective identification of gifted pupils.

2) Interest questionnaires

It is vitally important that the interests of *all* gifted pupils, except those already evaluated in Phase 3, should be tested by means of interest questionnaires. The results of such evaluation should be entered on ADDENDUM N.

The panel of evaluators should pay special attention to the relation between intellectual capacity, aptitude and interests. These are three cardinal indicators of the nature of the education that could be provided for individual gifted pupils. The panel should ensure that no gifted pupil is admitted to educational programmes that do not hold *the necessary interest for him.* With regard to interests it is also important that the data used in the identification procedure should not be *outdated.* Since the marking and evaluation of the results of these media are not very time consuming, it is recommended that an interest questionnaire be administered specifically with a view to identification.

3) Media for evaluating creative ability

All gifted pupils not previously evaluated in respect of creativity should be tested with the aid of ADDENDUM L and the other recommended media and the results entered on ADDENDUM N. This information too is very important with a view to the nature of education provision.

4) Personality questionnaires and/or projection media

All gifted pupils who have not previously done so should complete a personality questionnaire with a view to evaluating their personality traits. This information should also be entered on ADDENDUM N.

Should the panel deem it necessary to obtain more information about a particular pupil, a medium such as an attitude questionnaire may be used. If in isolated instances the questionnaire method fails to produce the desired results, the panel should make use of projection media.

Placement of gifted pupils who manifest psychological stress, instability, a high level of anxiety, worry, depression and the like should be treated with great circumspection. It may even be desirable to provide therapeutic assistance before placement, and the progress of such pupils in educational programmes for the gifted should be carefully monitored.

5) Performance tests

If the tests administered in the identification procedure do not provide sufficient information about a particular pupil, or if there is a need to obtain more particulars through observation, performance tests can be used. Relevant information obtained in this way should be entered on ADDENDUM N.

6) Biographical information

In this regard it is *vitally important* that ADDENDUM M be completed in respect of each individual gifted pupil. The information should be systematically updated.

7) Other media

The panel of evaluators is at liberty to use any other media it sees fit in cases where it is felt that information about a particular gifted pupil is inadequate. For some South African population groups the Survey of Study Habits and Attitudes (SSHA) Form H can be used to elucidate a gifted pupil's work motivation, study methods and attitudes towards study.

(c) Compiling a personal profile of the individual gifted pupil

The ultimate goal of the identification procedure is to compile a personal profile of every gifted pupil. The panel of evaluators should arrange all relevant information about each individual pupil in a systematic, logical, lucid and practical way. This can be done with the aid of ADDENDUM N, which was kept up to date throughout the identification procedure. Obviously not all the information collected in the course of the identification procedure can be entered on this addendum. It has been suggested elsewhere in this report that a file be opened for every pupil and that all additional documents be systematically filed.

(d) Recommendations by the panel of evaluators regarding the provision of education for gifted pupils

The panel of evaluators is responsible for recommending the nature of the education provision for each individual gifted pupil. From the start of the identification procedure the panel is intimately involved with the *child*, so that by the end of the procedure it should *know him well*. In addition the panel is so constituted as to include teachers who will probably have known the child over a period of some years. The panel is familiar with the needs of the school and community and with the home background of the particular pupil. It therefore stands to reason that this task should be assigned to the *panel* rather than to some other agency, institution or committee.

(e) Ongoing evaluation and re-evaluation of gifted pupils

The completion of Phase 4 still does not conclude the task of the panel of evaluators. Throughout this report it has been pointed out that the identification of gifted pupils is an ongoing process, even when it may seem as if the "supply" among a particular group has been exhausted. In particular the panel should note that the identification of gifted underachievers and culturally dissimilar gifted pupils is problematic and that these pupils are easily overlooked in the identification procedure. It may be advisable to risk admitting mistakenly nominated possibly gifted pupils from LIST B to educational programmes for the gifted if re-evaluation should reveal meritorious cases. "Borderline cases" in particular deserve special attention.

The panel should also keep a watchful eye on the progress of intensively identified gifted pupils. Pupils who do not progress satisfactorily should be withdrawn from special programmes without delay, or alternative programmes should be considered. The panel of evaluators is responsible both for determining the nature of the education provision for a particular gifted pupil and for monitoring his progress.

ADDENDUM N should be updated regularly in respect of the gifted pupil's progress in educational programmes.

3.5 CONFIDENTIALITY OF INFORMATION ABOUT GIFTED PUPILS

It is extremely important that all information about gifted pupils should be treated with the GREATEST CONFIDENTIALITY. On no account should it become known to unauthorised persons or to the pupils themselves. All documents (for instance, the files of identified gifted pupils) should be stored in a safe place and ACCESS MUST BE CONTROLLED. Not all the information should be available to every member of the teaching staff either - in fact, some information is so confidential that only MEMBERS OF THE PSYCHOLOGICAL/EDUCATIONAL AUXILIARY SERVICE should have access to it.

3.6 CONCLUDING REMARKS

In this chapter of the report an identification procedure and models for the identification of gifted pupils in the preprimary, primary and secondary school were proposed. With the procedure and models an attempt was made to adopt a multidimensional approach so that gifted pupils can be identified with the aid of a *personal profile.* In the author's view, careful, judicious implementation of the identification procedure and models should lead to the identification of a large percentage of the gifted pupils among all population groups in the RSA.

Obviously this will not solve every problem associated with the identification of gifted pupils - the matter is far too complex and contentious. Thus the identification of specifically gifted pupils remains problematic due to a lack of suitable standardised psychometric media. The proposed identification procedure and models could moreover entail a heavy additional workload for teaching staff *if they are not congruent with the normal psychometric evaluation programmes* and are not seen as a *long-term project.* Much of the information required for the identification of gifted pupils is in fact gleaned in the course of routine evaluation programmes and is therefore available to the panel of evaluators.

The authors of this section of the report trust that it will contribute positively to a solution to the problems associated with the identification of gifted pupils.

Owing to the problematic nature of the gifted underachiever, this topic will be examined in the next chapter.

CHAPTER 4

THE PROBLEM OF GIFTED UNDERACHIEVERS

4.1 INTRODUCTION

Despite numerous differences of opinion about the nature and origins of human aspiration, researchers, philosophers, thinkers, educationists and psychologists have concluded that the need to aspire - to achieve - is of the very essence of human nature. Indeed, in modern Western society the individual is *expected* to excel. A physically and psychically well-endowed person who fails to do so is liable to find himself an anachronism in present-day society.

Unfortunately such individuals do exist - for example gifted pupils who fail to realise their exceptional intellectual and other potential and consequently become underachievers. Their numbers, as we shall see in this chapter, are alarmingly high.

4.2 DEFINITION OF THE CONCEPT OF UNDERACHIEVEMENT

4.2.1 Various definitions

According to Engelbrecht (1973: 15), existing definitions of underachievement and underachievers are for the most part operational ones, all of them more or less hinging on discrepancies between *actual* and *anticipated* (predicted) achievement. The differences between definitions tend to be differences in nuance or differences with regard to pupil characteristics, projection media and criteria for the evaluation of scholastic achievement.

Gowan (French 1979: 396) defines gifted underachievers as follows:

"... we may call gifted children underachievers when they fall in the middle third in scholastic achievement in grades and severe underachievers when they fall in the lowest third."

Raph, Goldberg and Passow (1969: 2,3) supply both a general and a specific definition: "The broadest definition of underachievement among the more able would refer to all those who, for whatever reasons, fail to develop their potentialities maximally" (p.2); and "A somewhat narrower definition of underachievement refers to all those individuals who demonstrate well above average intellectual or academic ability on intelligence and aptitude tests but fail to develop their abilities" (p.3).

Du Toit and Van der Merwe (1966: 374) see the underachiever as someone who does not fully utilise his capabilities: someone who can do better than he in fact does.

Haasbroek and Jooste (1981: 47) give the following definition of this type of pupil: "... their achievements at school give no indication of their excellent potential or abilities or of their capacity to excel in specific areas". (Translation)

Such researchers as Anastasi, Goldberg, Kowitz and Armstrong, and

Robinson and Thorndike (quoted by Dowdall and Colangelo 1982: 180) see no reason to postulate such a category of gifted pupils: to them it is no more than a statistical artefact. Anastasi, for instance, asserts that the comparison of IQ scores with scholastic achievement constitutes an *abuse* of psychometric media because of the imperfect correlation between results. On the other hand various researchers, including Gallagher (1966: 236), Lyon (Gibson and Chennells 1976: 23), Clark (1983: 324) and Tannenbaum (1983: 210-224), have concluded that there are indeed gifted pupils who do not achieve optimal positive development of their potential.

The present report supports the latter point of view. For the purposes of this section we are defining gifted underachievers as pupils who have exceptional intellectual and other potentialities but fail to actualise them.

4.2.2 Extent of underachievement among gifted pupils

A number of researchers have cited statistics in respect of the incidence of underachievement. Thomas and Crescimbeni (1966: 77), for instance, assert that 15 to 25 per cent of pupils with IQ scores in excess of 120 may be regarded as underachievers. The same research team maintains that up to 50 per cent of all gifted boys can be described as underachievers by the time they leave school. This view is supported by the finding reported by Newland (1976: 91), namely that over 50 per cent of gifted pupils are underachievers. Similar figures are quoted by Trillingham and Bonsall (Crow and Crow 1963: 210). Du Toit (1964: 2) describes an American study of 4 900 bright pupils which revealed that the average scholastic achievement of 54 per cent of the boys and 50 per cent of the girls was so low as to endanger their access to tertiary education.

Regarding the RSA, Du Toit (1964: 2) mentions that 579 first-year students with IQ scores of 130 or more enrolled at a specific university over a period of five years. Of this group, 4 per cent ended their first year with an average of 80 per cent or more while 8,6 per cent failed to achieve an average of 40 per cent. The rest (middle group), too, failed to realise their potential. A similar study revealed that 27 per cent of first-year students with IQ scores of 130 or more failed to achieve an academic level of 50 per cent, and 64 per cent could not reach the 60 per cent mark. Du Toit concludes that, *at a very conservative estimate*, the academic achievement of over 50 per cent of these gifted students failed to do justice to their intellectual potential. Roos (1980: 11) quotes Laubscher's finding that 59,3 per cent of Afrikaans-speaking pupils with verbal IQ scores of 112 or more are underachievers in Standard 10. This figure supports Roos's own finding that the scholastic achievement of 56,2 per cent of Afrikaans-speaking and 37,2 per cent of English-speaking gifted (intellectually superior) Standard 6 boys is below the level indicated by their intellectual capacity. He concedes that the reported percentage may be unduly high on account of statistical regression (p. 13).

All these findings make it clear that underachievement among gifted pupils does indeed occur, and to quite a considerable extent. By and large the situation is far more serious than is generally supposed.

4.2.3 Categories of gifted underachievers

The literature suggests that a distinction can be made between various categories of gifted underachievers. Nel (1983: 1), for instance, notes the following groups:

* Gifted pupils who do well at school but do not optimally actualise their potential.

* Gifted pupils whose scholastic performance progressively declines and who may even fail.

Gowan supports this categorisation by distinguishing between "underachievers" and "severe underachievers" (see Par. 4.2.1).

According to Engelbrecht (1973: 16), both Fliegler and Miller postulate two general categories for the various types of underachievers:

* Chronic or long-term underachievers manifesting problems rooted in their early childhood at home. Their performance is *consistently* below their potential.

* Short-term or occasional underachievers whose underachievement is of a transitory nature.

Clearly then, underachievers are not a *homogeneous* group.

4.3 IMPLICATIONS OF UNDERACHIEVEMENT AMONG GIFTED PUPILS

4.3.1 Implications pertaining to the high-level manpower situation in the RSA

South African society at present can surely be described as a society in crisis. A number of major crises exist, one of the most acute being the high-level manpower crisis. This latter crisis may have one beneficial effect - the identification of gifted pupils as a possible solution to the problem. However, a significant proportion of high-level manpower is lost to society because of the underachievement of gifted pupils. As Gowan (Crow and Crow 1963: 214) has noted in the American context: "One of the greatest social wastes in our culture is that presented by the gifted child or young person who either cannot or will not work up to his ability."

It is difficult to fault Engelbrecht's comment (1973: 3) that the human potential of a country needs not only to be discovered and exploited but used to the full. He emphasises the importance of ensuring the optimal use of all relevant resources. Poor utilisation of human potential, especially when high-level potential is directed into the wrong channels, leaves a vacuum in the upper vocational groups. Such high-level potential is found in gifted pupils and also in gifted underachievers. It has already been noted that gifted underachievers form a significant percentage of all gifted pupils. Investigations such as the one by Roos (1980: 24, 41, 46, 100) in the RSA have shown that underachievement (poor scholastic performance) does result in a loss of high-level manpower.

Clearly this is a state of affairs that the RSA can ill afford.

4.3.2 Implications for positive, optimal personal development

According to Du Toit (1964: 1), the utilisation of a gifted pupil's abilities not only benefits society but is also vital for the person's own mental health:

> A mature, healthy personality is one that has retained and developed its human capacities ... When this does not happen, the result may be pathological conditions of boredom, loss of enthusiasm, apathy, self-disgust, general depression, a gradual deterioration of intellectual activity and taste, or outbursts of unused energy in perverse or harmful directions. Such people are inefficient and discontented. They do not experience the *pleasure* of the constructive life of which they are capable. They have to resign themselves to "leading stupid lives in stupid jobs", but such lives cannot possibly satify them. (Translation)

Jacobs and Vrey (1982: 13) describe the individual who can actualise his own latent potential as *human* in the full sense of the word. Such a person is fully *involved* in life. He is capable of directing his energies and abilities towards problems and situations *outside* himself. Gifted underachievers are *unable* to do this, probably for a variety of reasons, with all the concomitant negative implications for optimal, positive development.

4.4 POSSIBLE CONTRIBUTORY FACTORS IN THE UNDERACHIEVEMENT OF GIFTED PUPILS

4.4.1 Introduction

It needs to be noted that the relatively poor scholastic achievement of gifted underachievers is not due to any inability to excel. There is a tendency to forget that these pupils probably have the selfsame cognitive potential as other gifted pupils. There is usually *more than one* reason why gifted underachievers do not actualise their exceptional intellectual and other potentialities. As we shall see, some researchers ascribe underachievement to a personal *choice* made by some gifted pupils; others believe that certain *learning handicaps* are involved; yet others seek the causes of underachievement in the *school situation, home environment* and *cultural factors*. Another category of researchers maintains that gifted underachievers have certain *specific qualities* that may be conducive to underachievement. Obviously all these factors or a combination of them may be involved in underachievement by gifted pupils.

4.4.2 A personal choice by a gifted pupil

According to researchers such as Sumption and Luecking (1960: 145), Roth and Meyersburg (1963: 535) and Colangelo, Haggard, Shaw and McCuen (quoted by Dowdall and Colangelo 1982: 181), gifted pupils deliberately choose to underachieve. Gowan and Demos (1964: 303-304) quote Roth and Meyersburg as follows:

139

> They consider poor achievement a subconscious choice of the student in which he opts either for overall limited achievement or for achievement in a deviant and non-constructive channel.

A variety of factors may be involved in such a choice by a gifted pupil. The influence of the community to which he belongs can be a potent factor. Haasbroek and Jooste (1981: 56) point out that if the community disapproves of scholastic excellence, the gifted pupil may be under pressure to underachieve and may choose to conform to the norms of society. According to Schmidt (Shertzer 1960: 177), Gold (1965: 386-387) and Colangelo, Fox, Shaw and McCuen (quoted by Dowdall and Colangelo 1982: 181), gifted girls in particular are under social pressure to conform to the traditionally subordinate role of the female. For this reason they often prefer not to make themselves conspicuous, deliberately waiving the level of excellence that is within the reach of their exceptional endowments. In some communities there may even be a notion that boys who excel at school are "weaklings" - for instance, communities that set great store by physical strength and prowess, qualities that are not particularly esteemed by contemporary Western society. Such a view may cause some gifted boys to opt for underachievement. Other gifted pupils, fearing estrangement from a peer group, may underachieve in order to conform.

4.4.3 Learning impairment

Clearly certain learning handicaps can impair scholastic performance, causing some gifted pupils to underachieve. A few examples will suffice here to illustrate this point:

Cutts and Moseley (1958: 133), Hildreth (1966: 432) and O'Leary as quoted by Grotberg (Barbe and Renzulli 1975: 209) point to the rcle played by correct study methods, and Du Toit (1964: 11) to a pupil's *attitude to study*. Roos (1980: 72) found that gifted (intellectually superior) underachievers (scholastically poor performers) use inferior study methods and display a relatively negative attitude towards their teachers.

Reading ability plays a decisive part in scholastic performance. Hildreth (1966: 251) points out the danger of taking for granted that gifted pupils will necessarily have an advantage in respect of reading ability. Some of these pupils are not even very interested in reading. This can produce a handicap in the area of reading ability that can impair the development of learning and other skills. Both Nel (1964: 8-9) and Connor (1968: 1 446) conclude that gifted underachievers may have reading problems.

Other learning impairments can naturally also contribute to underachievement by gifted pupils. Factors such as neurological dysfunction, poor teaching practices, cultural deprivation, genetic factors, physical handicaps and ill health can be mentioned in this regard.

4.4.4 The school situation

The training currently given to student teachers is designed first and foremost to equip them for the task of teaching mainstream pupils. They should therefore not be expected, as a matter of course and without expert help, to identify gifted children or devise and present special teaching programmes for such children. Haasbroek and Jooste (1981: 54) quote Evans, who as long ago as 1966 concluded that most of the blame for underachievement by gifted pupils should be laid at the door of teachers who are inadequately qualified, incompetent or lacking in self-confidence. While this may be a somewhat extreme viewpoint, deficient teachers should not be overlooked as a possible cause of underachievement.

Research by Kowitz and Armstrong (quoted by Zilli 1971: 282) established that school policy and the educational climate of a school have a marked effect on the achievement pattern of pupils. Schools that encourage excellence and provide intellectual stimulation produce fewer underachievers, especially among the gifted. It has also been found that in schools with a non-intellectual bias, where teacher authority is paramount and pupils are under pressure to conform to common standards, gifted pupils have little opportunity to manifest their giftedness. At such schools there is minimal communication between teacher and underachiever, and the teacher is perceived by the underachiever as someone who is *not* concerned about his pupils' interests. Khatena (1982: 219) substantially supports this view when he writes, citing the views and findings of a number of researchers, that underachievement can be promoted by poor teaching methods, unsympathetic and insensitive teachers, monotonous classroom drills, a curriculum that does not meet the needs of gifted pupils, teachers who are content with *satisfactory* work (hence do not encourage the *optimal* realisation of pupil potential) and rigid classroom activities that discourage creative thinking.

Hildreth (1966: 425) points out that gifted pupils are apt to lose interest in their work if it is not sufficiently challenging. Such a lack of interest can be a direct cause of weak motivation and underachievement. According to DeHaan (1963: 105-107), Hildreth (1966: 425-426), Rice (1970: 248) and Haasbroek and Jooste (1981: 54-55), underachievement by gifted pupils can sometimes be traced to incorrect didactic practices. For instance, teachers are not always sufficiently sensitive to the affective and intellectual needs of gifted pupils; sometimes they are too authoritarian or obsessed with discipline and the mere transfer of knowledge. Some of them are not interested in encouraging pupil initiative, or are unwilling to do more than the bare minimum in the teaching-learning situation. Such teachers may themselves be intellectually inert and thus not truly expert in their own subject fields. Then there are teachers who set unrealistic standards of scholastic achievement and resort to threats, disparaging remarks, warnings and ultimatums. Subject matter is sometimes presented in such a way that the gifted pupil is not encouraged or challenged to actualise his or her potential. Finally, teachers sometimes forget that the learning process takes place *in a specific social and personal context*.

Gifted pupils display unique and divergent personal and learning characteristics, and thus have distinctive (sometimes unique) affective, social and cognitive educational needs - this makes highly specific demands on the educational and teaching resources of a school.

Unless these pupils' needs are met, the positive development of their innate inquisitiveness may be impaired, causing them to dislike their teachers and school in general and to associate with other pupils who share the same outlook. They may also lose their motivation for scholastic achievement, neglect their homework and opt out of the teaching-learning situation. Such pupils may show either a complete lack of interest in future vocation, or in the future generally, or they may develop unrealistic aspirations.

It may therefore be concluded that the gifted pupil's school situation can indeed be a factor in underachievement.

4.4.5 The home environment

Dowdall and Colangelo (1982: 181) quote Gowan, Abraham, Gowan and Demos, Khatena, Shaw and McCuen, Thiel and Thiel, Whitmore, and Ziv *et al.* who maintain that underachievement can in part be traced to the home environment. It goes without saying that parents as primary educators can contribute to the negative development of a gifted pupil's learning and personal characteristics, with underachievement as a possible result.

Research has brought to light certain characteristic features in the home environment of underachievers, including gifted underachievers. Haasbroek and Jooste (1981: 52), for instance, believe that the relationship of trust, authority and understanding between father and children is negative or lacking in such homes. Gurman (1970: 50-51) concurs, finding in respect of underachieving boys a communication problem between parents and children in the sense that family members are unwilling or unable to communicate on matters of common interest. Scholastic performance is one of the sources of conflict between such children and their parents. Hildreth (1966: 428) notes that the fathers of underachievers are often away from home, and DeHaan (1963: 102-103) in fact concludes that the father figure (as an authority and identification figure) is often *totally absent* in such homes. This may be the reason why underachievement is more common among boys than among girls.

It should also be noted that such researchers as DeHaan (1963: 103), Shaw and White (1965: 10-13, Grandlund and Knowles (1969: 496), Gurman (1970: 51) and Haasbroek and Jooste (1981: 52) conclude that underachievers frequently have problems in identifying with the parent of the same sex. This may be due to absenteeism (see above) or possibly also to the fact that the parents of gifted underachievers often, according to Haasbroek and Jooste (1981: 52), set unrealistic standards in respect of scholastic achievement because they see their gifted children as *status symbols*. DeHaan (1963: 103) agrees, pointing out that such children sometimes reject their parents' values. The fathers in particular may be domineering and unapproachable. This may well be why underachievers frequently feel rejected by their parents. Shaw and White (1965: 10-13) refer to the correlation between adequate sex-role identification and achievement. They found that achievers identify with the parent of the same sex whereas underachievers do not. According to these findings, which are confirmed by Grandlund and Knowles (1969: 495-496), appropriate sex-role identification is characteristic of achievers but not of underachievers. The whole question of appropriate sex-role identification becomes highly problematical if we consider Torrance's view (Gowan, Khatena and Torrance 1981: 16) that a certain *sensitivity and independence* of thought and judgement are prerequisites for the development of creative ability, and also that present-day society tends to regard *sensitivity* as a *female* and *independence* as a *male* characteristic. Interestingly, MacKinnon (Barbe and Renzulli 1981: 122) found the parent identification pattern in unusually creative individuals (architects in this case) to be *less pronounced* than usual. Such persons were found to identify either with both or with neither of the parents.

Jacobs (Müller 1979: 42) cites Duminy's finding that gifted pupils are sensitive to any conflict in the relationship between their parents. He goes on to say that gifted pupils tend to become tense and hypersensitive if confronted with social problems at too early an age. Haasbroek and Jooste (1981: 52) are therefore probably correct in maintaining that social and affective problems in the home are a factor in underachievement. These researchers (1981: 52) also note that some parents perceive the achievements of their gifted children as a threat. Jacobs (Müller 1979: 24) concurs, stating that parents sometimes feel anxious and threatened when a gifted child has interests that are totally different from those of his age group: it may seem to pose a threat to their established way of life. This can further complicate the parent-child relationship since the parents may also see such a child as a misfit in the family. Haasbroek and Jooste (1981: 52) remark further that parents of gifted children can be exceedingly strict and even harsh in the matter of discipline and especially punishment. Hildreth (1966: 430) points out that the opposite can also happen: some parents can be too permissive in the education of their children.

Finally, Raph, Goldberg and Passow (1969: 50), Collins and Douglas, Coleman, Lewis, Gough, Scheffer and Ackerman (quoted by Roos 1980: 19) conclude that there is a correlation between the socio-economic status of parents and the scholastic achievement of their children. For instance Frankel (quoted by Raph, Goldberg and Passow 1969: 50) established that achievers come from homes with a higher socio-economic status than that of the home of underachievers, and also that the fathers of achievers are more highly qualified than those of underachievers. Noel (1970: 2 808) also discerns a link between scholastic achievement and socio-economic status. This is probably due, as Taylor and Van der Westhuizen (1983: 23) assert, to the likelihood that pupils from homes in the lower socio-economic bracket may have suffered deprivation in respect of basic needs. The same research team (1983: 24) points out that inadequate aesthetic experience produces a negative approach to life: children become depressed when they are constantly confronted by an ugly, neglected and sordid environment, and this condition affects every level of their experience.

According to Haasbroek and Jooste (1981: 53), an inadequate home upbringing will cause gifted pupils to manifest feelings of inferiority and worthlessness: in other words, a *negative self-image*. This point will be discussed in greater detail in a subsequent section.

Such pupils are mistrustful, apathetic and hostile. Convinced that their parents are dissatisfied with them, they feel rejected by their families. They in turn reject authority and display hostility towards parents, teachers and other adult members of society. They are unmotivated when it comes to scholastic achievement and negative about studying (hence they neglect their homework). In addition they are helpless and accept no responsibility for their conduct.

4.4.6 Dissimilar cultural environment

In Chapter 3, and in the addenda to this report, mention is made of the effect of culture on the manifestation of giftedness and the importance (and difficulty) of identifying gifted pupils from dissimilar cultural environments. As indicated, cultural dissimilarity frequently results in scholastic backwardness. Sometimes, too, the actualisation of giftedness may differ so much from one culture to another that a pupil may not be able to actualise his or her giftedness in terms of the values and norms of the dominant culture. For the purposes of this chapter it should therefore be noted that *gifted pupils from dissimilar cultural environments are frequently underachievers*.

4.4.7 Geographical isolation

Yet another factor in underachievement by gifted pupils, according to Taylor and Van der Westhuizen, is geographical isolation. These authors (1983: 29) state that geographical isolation can aggravate scholastic impairment, thereby contributing to underachievement. For example, children living in remote rural areas do not always have the same opportunities as city children to develop their intellectual potential. They also remark that the accessibility of tertiary education, for instance, may bring gifted children into contact with people who will stimulate their interest and help them increase their knowledge in communal areas of interest, thereby helping them to actualise their potential.

4.4.8 Self-concept as a factor in the actualisation of giftedness

Nel (1964: 2) quotes Stevens as noting a correlation between certain dimensions of self-concept (such as self-insight and self-acceptance) and achievement. Brookover, Thomas and Patterson (quoted by Engelbrecht 1973: 94) found a significant positive correlation between the self-concept of secondary pupils with regard to their abilities, on the one hand, and their examination marks on the other. They also concluded that there are *specific self-concepts with regard to ability* which show a correlation with *specific scholastic areas*, as distinct from self-concept in respect of general ability. Telford and Sawrey, Irwin, Purkey, Binder, Jones and Strowig, Biggs and Tinsley, and Greineks (quoted by Engelbrecht 1973: 94) all note a clear, consistent and significant connection between self-concept and scholastic achievement. This would seem to indicate that pupils and students manifesting a positive self-concept are relatively more successful in scholastic and academic terms. Stenner and Katzenmeyer (1976: 270), too, cite studies that indicate a significant and positive association between self-concept and scholastic achievement. Hayes (1968: 399) points out a significant positive correla-

144

tion between mathematical achievement and self-concept in respect of mathematical ability. These studies suggest that the successful pupil/student perceives himself positively, accepts himself, has a relatively high yet realistic opinion of himself and is optimistic about his future achievements. He is confident about his own ability (including his ability to study) and sees himself as hard-working and accepted by his peer group.

Combs, Shaw and Alves (quoted by Peters 1968: 1792), French (quoted by Zilli 1971: 282), Walsh (quoted by Gallagher 1975: 345) and Haasbroek and Jooste (1981: 50) note that underachievers have a negative self-concept which manifests as a feeling of inferiority. They consider themselves incapable of any achievement, and this feeling of inferiority is reflected in suspiciousness, apathy and hostility on their part. Underachievers see themselves as less able to do what is required of them, less eager to learn, less self-confident, less self-reliant and less ambitious than those around them. They also consider themselves less acceptable to others. French (quoted by Zilli 1971: 282) agrees that underachievers display feelings of inferiority and that, being convinced of the mediocrity of their own abilities, they reject all indications to the contrary.

Franks and Dolan (1982: 175) record the following conclusion:

Some research has shown a connection between low self-concept and underachievement for gifted pupils. Kanoy and others (1980) found that their gifted achievers had significantly higher self-concept scores than their gifted underachievers. Fine and Pitts (1980) suggest that although several factors probably contribute to underachievement, most underachieving children also have a pattern of low self-esteem. According to Whitmore, " ... all research on gifted underachievers has indicated that negative self-concepts and low self-esteem are a predictable characteristic of this type of child" (Whitmore 1980: p.214).

4.4.9 Manifestations

Researchers have established that gifted underachievers, and underachievers in general, display certain characteristics that are so distinctive that they can be used for purposes of identification. It is not always clear to what extent these characteristics and underachievement are causally linked, but what is clear is that cognitive as well as non-cognitive factors are involved in scholastic achievement. According to Roos (1980: 61), it is often assumed that poor scholastic achievement is the result of a given pattern of personality traits. According to this view, underachievers - gifted underachievers in this case - show no lack of endowment or specific scholastic ability: their poor performance is due to inadequate personality development, for example certain personal characteristics make it difficult for gifted underachievers (and underachievers in general) to adjust to the teaching-learning situation, and this inadequate adjustment is one of the causes of their underachievement. In effect the personality of a gifted underachiever is a major factor in his poor scholastic achievement.

It needs to be borne in mind that the following profile of the gifted underachiever *is a composite one: not all the characteristics cited are necessarily applicable to all gifted underachievers*. Researchers are moreover not always explicit about the category of underachievers to which they are referring, for instance whether they are talking about *underachievers in general* or *gifted underachievers in particular*. However, Dowdall and Colangelo (1982: 181) conclude that gifted underachievers have more in common with *underachievers in general* than with *gifted achievers*. In what follows, an attempt will be made to indicate the category of underachievers meant by researchers.

McKenzie (quoted by Roos 1980: 61) found a higher level of anxiety in underachievers than in achievers. Van der Merwe (1964: 2) agrees, noting that gifted underachievers are tense and anxious though they do not know how to verbalise these feelings. According to him they are subject to a certain bewildered acquiescence and blunting of the emotions, accepting their failures as blows of an inscrutable fate. Often enough they are unaware of their own marked state of tension. This may well be why, according to Van der Merwe (1964: 1), some researchers are content to diagnose such cases as *schizophrenia*: in fact, he himself suggests a diagnosis of *simple or hebephrenic schizophrenia*. Other researchers suggest a possibility of pseudoneurosis or even pseudopsychosis. While such views may be extreme, the presence of anxiety and tension in underachievers is confirmed by such researchers as Zeaman and Bond (quoted by Nel 1964: 1-2), Taylor (quoted by Dickenson and Truax 1966: 244), McKenzie (quoted by Roos 1980: 61) and Nel (1983: 20). Van der Merwe (1964: 1) remarks that the phenomenon corresponds in many ways with the General Adaptation Syndrome of Selye, implying that this behavioural syndrome may indeed culminate in psychosis. According to Van der Merwe, the possibility is confirmed by Grinker and Siegel's finding that *acute anxiety* can develop into a schizophrenic reaction (p.2). Though not all researchers would go along with this view, it nonetheless *underlines the seriousness of the problem* and the crucial importance of *early identification and therapeutic support*.

Both Clark (1979: 280) and Haasbroek and Jooste (1981: 50) conclude that gifted underachievers are convinced that they are rejected by their families and that their parents are dissatisfied with them. This may well be the reason for their revolt against authority, hostility to adults and high level of aggression. Personality traits such as hostility, antagonism and aggression in underachievers are well documented in the literature.

McKenzie, for example, found (according to Roos 1980: 61) that pupils of this type display a measure of antagonism to authority and a rejection of socially accepted values. Shaw and Brown (1957: 199), Roth and Puri (1967: 280) and Morrison (1969: 171) all note that underachievers are aggressive. Roth and Puri (1967: 280) go on to remark that such aggression is often directed against themselves. Zilli (1971: 283) remarks that gifted underachievers tend to evaluate others negatively and to view them with considerable hostility. They appear to distrust the people around them and to regard their own rights and interests as more important than those of others.

It needs to be noted that pupils displaying a high level of hostility and aggression expend a significant amount of time and energy on controlling and concealing these reactions and hence have less to give in terms of creative and productive behaviour.

Van der Merwe (1964: 4) points out that although these pupils have an exceptional intellectual capacity, they are unco-operative: they create an impression of unwillingness to be involved, an attitude of "let's get it over with". They soon lose interest, need constant exhortation and cannot concentrate on their work for long. They find it difficult to complete any task that is at all monotonous and therefore fails to hold their attention. According to Van der Merwe (1964: 3), such a pupil's volitional decisions are not strong enough to motivate him. He shows a need for support, but even if the support is forthcoming, he remains unable to make a decision. Confusion about objectives is reflected as indecisiveness. These pupils are constantly changing their minds, switching from one subject or discipline to another, choosing a different career. They go where their friends go, do what their friends do, even opt for the same subjects and fields of study. Purposive action and single-mindedness on their part are short-lived. The underachiever patently has a poor *intrinsic* work motivation. Davids (1966: 87), Hildreth (1966: 429), Gilmore (1968: 55-57), Oakland (1969: 454) and Smith and Winterbottom (1970: 390-391) confirm this. Haywood (1966: 666), too, found their *intrinsic* work motivation to be subnormal - mainly in the case of the lower IQ groups, but the higher IQ group in his study also displayed this tendency to a certain extent.

Clark (1979: 280), Haasbroek and Jooste (1981: 51) and Whitmore (1980-81: 369) all support Van der Merwe's finding (1964: 2) that this type of pupil has difficulty in concentrating. The latter author (1964: 2-3) goes on to say that gifted underachievers cannot persevere with a task that requires strenuous thought and that their thought processes are constantly interrupted. While they generally understand what they are reading, they have difficulty in following the thread of thought from one paragraph to the next. Van der Merwe makes the illuminating remark that the examination papers of such pupils tend to suggest *associative reproduction* rather than *productive thought* and that they are liable to grave *errors of reasoning*. The consequent poor results are due to *inexplicable mistakes* rather than the difficulty of the work. Easy tasks are often bungled while difficult and complex tasks are completed with surprising accuracy. According to French (quoted by Zilli 1971: 283), gifted underachievers are less concerned about good results than achievers are. They set their sights lower and have less confidence in their own ability. Their outlook on life appears to be demoralised and cynical; they tend towards escapism and wishful thinking as a means of evading their problems. Zilli (1971: 283) cites Shaw as concluding that such pupils lack self-discipline and therefore cannot persevere with an uncongenial task. They appear unable to confront the reality of an unpleasant or difficult situation or task ("if I ignore it, it will go away") or of remote objectives. This may well be why researchers such as Barrett (quoted by Nel 1964: 2), Clark (1979: 280), Haasbroek and Jooste (1981: 51) and Whitmore (1980-81: 369) conclude that gifted underachievers dislike going to school and are antagonistic to teachers.

According to Roos (1980: 61), Easton found that achievers are more positive in their family relationships than underachievers and display fewer antisocial characteristics, but that they at the same time have fewer social *skills* than underachievers. He also found underachievers to be more egocentric than achievers. Van der Merwe (1964: 3), again, writes that a gifted underachiever handles his social life either in a superficial, couldn't-care-less way or else like a somnambulist; often he tends to be withdrawn. Stoner (quoted by Nel 1964: 1) also concludes that achievers and underachievers differ in respect of socialisation, the latter being more defensive, censorious and dour. Barrett (quoted by Nel 1964: 2) concurs, noting that underachievers are not accepted by their peer groups to the same extent as achievers. Both Teigland *et al*. (1966: 954-955) and Jackson (1968: 61) point out that underachievers are liable to have socialisation problems. Taylor (quoted by Dickenson and Truax 1966: 244) also points to negative personal relationships among such pupils and a *social* rather than an academic orientation. This view is supported by the findings of Owens and Johnson (1949: 44) who conclude that underachievers tend to be extroverts. This may explain Engelbrecht's finding (1975: 52-53) that, in the case of boys, inferior scholastic achievement is linked with extroversion. He cites a number of other researchers who mention the positive correlation between introversion and self-knowledge on the one hand and scholastic achievement on the other. Roos (1980: 65) likewise found that some of the gifted (intellectually superior) underachievers in his research group tended towards extroversion. Nel (1964: 5) also found achievers to be more introverted than gifted underachievers. According to him (1964: 6), the gifted underachiever appears to have *excessive* self-confidence which may have a compensatory function: it may be that such a pupil is in reality very aware of his *actual* lack of self-confidence and is trying to hide his vulnerability. His unrealistic self-confidence may also be mere *boastfulness* designed to compensate for poor scholastic performance. Often it is a case of bravado, creating a false picture of self-confidence and extroversion. The affective lability and immaturity of this type of pupil may well be the root cause of his lack of depth: because his attitude to life is superficial, his relationships too may be expected to be superficial.

It should be borne in mind at all times that *the conclusions of a good many researchers are based on findings in respect of the so-called "average" underachiever or gifted underachiever*, who is often a mere *statistical artefact* and has no real existence. Research findings concerning underachievers and gifted underachievers should therefore be *approached with caution* and it should *never* be assumed that any particular characteristic applies to *all* gifted underachievers. This vital point is amply illustrated by the conclusions of Nel (1983: 19) who - unlike the other researchers already cited - maintains that gifted underachievers tend to be shy, reserved, withdrawn, unsociable and hide-bound. In other words, such pupils display characteristics that *may* indicate introversion. According to Nel, gifted underachievers take a long time to get over frightening or distressing experiences, and he concludes that their reserve is due to their perception of human contact as automatically exhausting.

While researchers differ widely about the social characteristics of underachievers and gifted underachievers, this pupil group does seem to display more negative features than achievers.

Nel (1964: 1-2) cites a large number of researchers who maintain that underachievers in general have considerable adjustment problems and display greater anxiety, tension, depression and insecurity than achievers. Norfleet (1968: 978-979), Thelen and Harris (1968: 561), Clark (1979: 280) and Haasbroek and Jooste (1981: 51) all refer to the pronounced immaturity, affective lability and adjustment problems manifested by these pupils and also to their lack of self-discipline, tendency to procrastinate, reluctance to undertake uncongenial tasks, impulsive behaviour and unwillingness to confront unpleasant situations. Johnson (1971: 241), Whitmore (1980-81: 369) and Dowdall and Colangelo (1982: 181) are in substantial agreement with this view. Nel (1964: 6), too, concludes that gifted underachievers are not as well adjusted as achievers. Their affective development seems to be slower, hence the affective lability, immaturity and childishness that are probably at the root of their impulsiveness and irresponsibility. Some of the above researchers have also found that the moral values of underachievers are poorly developed. According to Nel (1964: 6), it is their impulsiveness and irresponsibility that are to blame for this state of affairs/ since they are not always aware of the implications of their conduct.

Bond (quoted by Nel 1964: 2), Taylor (quoted by Dickenson & Truax 1966: 244), Clark (1979: 280-281), Whitmore (1980-81: 369) and Haasbroek and Jooste (1981: 51) maintain that underachievers, because of their psychological make-up, display a lower level of aspiration than achievers, are unable to plan their objectives in advance and are unrealistic in their pursuit of goals. These views obviously have far-reaching implications for the subject choices made at school by underachievers.

Lewis (quoted by Roos 1980: 61-62) concludes that gifted pupils who do badly at school are different from achievers in respect of such characteristics as dependence, originality, self-reliance and intellectual curiosity ("investigativeness"). Rauch and Wall (quoted by Nel 1964: 2) maintain that positive personality traits such as capacity for leadership, sound judgment, reliability and responsibility are more common among "overachievers" than among underachievers. Taylor (quoted by Dickenson and Truax 1966: 244) points to the conflict between dependence and independence in underachievers - a view confirmed by Smith and Winterbottom (1970: 389), who likewise note a high degree of dependence and also a defensive attitude in underachievers. Taylor (quoted by Dickenson and Truax 1966: 244) and Whitmore (1980-81: 369) remark on these pupils' lack of initiative, their inflexibility regarding interests, affective problems, frequent hypersensitivity, inability to conduct themselves properly in groups, anxiety, negative self-evaluation, hostility to authority, negative interpersonal relationships, social rather than scholastic/ academic orientation and unrealistic goal orientation.

One is compelled to agree with Nel (1983: 20) that underachievers have not acquired the self-insight needed to manipulate their environment (life world) effectively and consequently *cannot achieve a positive orientation to learning*. Nel also considers such pupils to have a poorly developed ego, resulting in anxiety and insecurity. Because of his weak ego, the underachiever has a *diffuse sense of identity*, and consequently his potentialities are not properly realised. Nel (1983: 20) reaches the *vital and far-reaching conclusion* that gifted underachievers appear to *spend most of their psychic energy in dealing with a defective self-image and consequently do not have the energy to handle the demanding task of actualising their giftedness*. It is difficult to fault this conclusion.

4.4.10 Résumé

It is evident that Dowdall and Colangelo (1982: 182) are correct in asserting that underachievement in gifted pupils is the result of a *number of complex factors*. Although the area has been investigated repeatedly, these authors come to an alarming conclusion:
"Researchers have not been able to narrow the field to a few significant variables; rather, they have underscored the gambit of relevant issues involved in underachievement."

Oakland (1969: 452) agrees up to a point and also deplores the poor quality of some of the research, citing Ralph and Tannenbaum's view that many of the investigations have produced inconclusive and sometimes conflicting results. The latter two researchers also remark that "... despite the voluminous work done in this area, we do not as yet have a clear profile of traits that distinguish underachievers from their comparably able peers who live up to scholastic expectations". Oakland (1969: 452) ascribes this to two causes: an inadequate empirical research setup and defects in the psychometric instruments employed. "The last twenty years of research on UAG (underachieving gifted) have produced more confusion and circularity than clarity and direction." This opinion, expressed by Dowdall and Colangelo (1982: 182), may also be attributable to the two reasons mentioned above.

4.5 ONSET OF UNDERACHIEVEMENT

Engelbrecht (1973: 16) cites a number of researchers, including Shaw and Brown, and Frankel and Nel, who found that in the case of most school beginners, performance matches capacity and that underachievement in intellectually superior pupils begins at about Standard 4. The gap between achievers and underachievers increases progressively throughout secondary school and is at its widest during the first year at university. Shaw and McCuen (Gallagher 1966: 262-264) agree that it is in secondary school that underachievement becomes really noticeable, but they point out that it begins at the primary level: in fact, these two researchers consider it possible that a predisposition to underachievement may already be present *when a child first goes to school*. Jacobs (Müller 1979: 40) points out that gifted underachievers can be identified during the *junior phase* of primary school. According to Van der Merwe (1964: 1), some researchers consider that this condition starts at a very early age, passes unnoticed, and only becomes strongly apparent during adolescence. Du Toit (1964: 3) notes that underachievement rarely begins at university (as a result of poor adjustment, for example) but is "imported" in the form of a settled behavioural pattern that has existed for years. The academic demands of a tertiary institution often precipitate a *total collapse* of a pupil's behaviour pattern, creating the false impression that the problem first emerged at tertiary level.

Another point that needs to be noted is that *sexual differences* play a part both in the onset of underachievement and in its incidence. Shaw and McCuen (Gallagher 1966: 261-265) point out that underachievement in *boys* can surface during the very first year at school and that differences in scholastic achievement between achievers and underachievers can be significant by the third year at school. In the case of gifted *girls* these differences were found not to be significant until the ninth year at school. A number of researchers, including Cutts and Moseley (1958: 132), Van der Merwe (1964: 3), Gallagher (quoted by Zilli 1971: 280), Whitmore (1980-81: 369) and Bricklin and Bricklin, Hecht, Newman *et al.* and Pringle (quoted by Dowdall and Colangelo 1982: 181), conclude that underachievement is a problem mainly manifested by boys. The phenomenon remains enigmatic despite attempts to explain it - for example Newman *et al.* (quoted by Dowdall and Colangelo 1982: 181) concluded that the boys they studied, though possessing the verbal capacity to do well in verbally oriented *intelligence tests*, nonetheless had other verbal deficiencies that hampered their *scholastic achievement*. This has far-reaching implications for preventive action, identification, therapeutic support and the provision of special education - a subject that will be studied in more detail in Paragraph 4.6. While underachievement is more common among gifted boys, it should be remembered that gifted girls too can become underachievers. As already indicated (Par. 4.4.2), gifted girls are especially subject to community pressure to conform to the traditionally subordinate role of women in society, which may well lead such girls to decide not to develop their exceptional intellectual and other potentialities to the full.

4.5.1 Importance of early identification

A number of researchers, including DeHaan (1963: 108), Hildreth (1966: 434), Shaw and McCuen (Gallagher 1966: 264) and Newland (1976: 95), have pointed out the importance of early identification and therapeutic support for such pupils. Gallagher (1975: 347) underlines the seriousness of the situation:

"The clear implication of these findings is that, unless some major attempt is made to counteract these trends at *an early age*, these underachievers will turn out as relatively nonproductive members of our society, to the detriment of both society and themselves." (Own italics)

Gold (1965: 404) concludes that therapeutic support for underachievers, if delayed until the secondary school phase, *will be worthless* to some of these pupils: the pattern of underachievement has become so entrenched by that time that it can no longer be changed. Abraham (Crow and Crow 1963: 225) agrees, urging that underachievers ("slow learners") should be identified before the pattern becomes ineradicable. Secondary school teachers should therefore not wait for gifted underachievers to "present" themselves but should work closely with the primary school.

Van der Merwe (1964: 6) considers the prognosis for a gifted underachiever to be good as long as tension is still evident in him. If there is no tension and a lack of initiative, the prognosis is poor. The sooner the condition is diagnosed and therapeutic support provided, the better the chances of recovery. These statements underline the points made in earlier sections of this report about the importance of identifying gifted underachievers at an early age.

4.6 GUIDELINES FOR A SYSTEM OF EDUCATION PROVISION FOR GIFTED UNDERACHIEVERS

4.6.1 Purpose of such a system

The purpose of introducing a system of special education provision for gifted underachievers is self-evident. It should address the psychological and other problems that are causing the underachievement, provide special education to eliminate or reduce any scholastic backlog, and include the pupil in a programme of special education for gifted pupils.

Gifted underachievers have to be motivated to *actualise* their exceptional and other potentialities, both for their own sakes and for the good of society. This can be achieved only through intensive therapeutic support and the provision of special education within the framework of education for gifted pupils.

4.6.2 Provision of education for gifted underachievers

(1) Introduction

The provision of special education for gifted underachievers can be broken down into the following components:

- The identification of gifted underachievers;
- therapeutic support for pupils of this type;
- the provision of *special* education for them;
- their inclusion in special educational programmes for gifted pupils.

(2) Specific problems

Nel (1983: 22) refers to serious deficiencies across the entire spectrum of education provision for gifted underachievers in the RSA. The gravest deficiency is probably a shortage of specialised, professional teachers to meet the needs of gifted underachievers.

Nel goes on to list the following specific problems:

- **The problem of handling gifted underachievers in mainstream education**

  Under this heading there are serious shortcomings in such areas as identifying gifted underachievers, finding teachers capable of providing remedial support, finding the time for assistance of this kind, identifying pupils with learning problems and designing remedial programmes for them.

- **Problems and shortcomings in the area of education provision for environmentally deprived gifted underachievers**

  Obviously there are gifted pupils who suffer from environmental deprivation. According to Nel (1983: 23), overall provision for the education of such pupils is inadequate, resulting in underachievement and premature school leaving.

- **The problem of improving parental involvement in the education of gifted underachievers**

  The parents of gifted underachievers are not sufficiently involved in the education of their children. Nel (1983: 23) insists that such involvement is essential, particularly since provision for the education of gifted underachievers is still far from adequate.

It should be self-evident that both gifted and average pupils can experience problems with their schoolwork. In the education of gifted children, too, provision should therefore be made for remedial teaching. According to Nel (1983: 24), underachievement among the gifted may be symptomatic of the fact that schools, in partnership with parents as primary educators, have so far failed to meet the teaching and educational needs of such children *and will probably never meet them completely*; hence underachievement, also among the gifted, is probably here to stay. While it can be remedied or at any rate ameliorated, the circumstances of individual children are complex and unique and considerable expertise is needed to analyse each case and deal with it scientifically and responsibly.

Class and subject teachers, although they are expected to refer gifted underachievers for specialised help, have a crucial part to play in the initial identification of such children and in the implementation of remedial teaching. Teachers need to be specially trained for this role and to be given assistance by remedial teachers/orthodidacticians/orthopedagogicians/guidance teachers/psychologists.

The following recommendations are therefore made:

Recommendations

1. Basic in-service training programmes should equip teachers for identifying gifted underachievers and giving them the necessary remedial support within the school context:

2. Pupils at primary schools should have access to remedial teachers. Such teachers need training for remedial teaching in addition to their basic teacher training and should be responsible for

   (i) liaising with and guiding class and subject teachers;
   (ii) presenting auxiliary/remedial classes;
   (iii) liaising with child guidance clinics;
   (iv) liaising with persons charged with the provision of special education for gifted pupils.

3. Every secondary school should have at least a guidance teacher/ psychologist. Such a teacher should be trained in educational, clinical and/or guidance psychology and should be responsible for

   (i) liaising with and guiding subject teachers in respect of gifted underachievers;

   (ii) liaising with child guidance clinics;

   (iii) liaising with persons charged with the provision of special education for gifted pupils.

4. Directed, advanced in-service teacher training courses to which only selected candidates are admitted should be introduced. Such courses should *inter alia* train teachers to identify gifted pupils and design individualised teaching programmes for them.

One has to agree with Nel (1983: 28) that parent involvement is an essential factor in all school education. In the case of a gifted underachiever it is even more essential, qualitatively different and exceedingly strenuous because of the nature of such a child's problems (see Par. 4.4).

The following recommendations are therefore made:

(i) Every school should draw up a written policy in respect of parent involvement in the teaching of gifted underachievers.

(ii) The involvement of both parents should be secured.

(iii) Parents should be given more systematic guidance about the education and care of their children. Such guidance could take place at parent meetings at schools.

(3) Educational needs of gifted underachievers

(a) Intensive therapeutic support

Underachievement, especially among the gifted, is a serious problem which unfortunately is not sufficiently understood in educational circles. Gallagher (1975: 352-353) notes, as one of the gravest stumbling blocks, a *consistent underestimation of the nature and extent of the problem*. Little constructive work will be done as long as underachievement by gifted pupils is ascribed to stubbornness, laziness or antagonism towards teachers. Gallagher touches on the fact, already highlighted by previous sections of this report, that underachievement is in fact an *overall approach, a way of life*. The same conclusion is implicit in the work of Goldberg *et al*. (Gallagher 1966: 239-257). Roos (1980: 46-48) found that underachievement (poor school performance) is manifested not only in school achievement but also in the development of such traits as leadership potential, sporting achievement and relationships with teachers. These and other research findings imply that it is vitally important to identify gifted underachievers and provide them with the necessary therapeutic support.

At the same time it should be borne in mind that the mere identification of gifted underachievers ***will not solve the problem***. The condition can become a life-long problem, and therefore underachievers need therapeutic support. Haasbroek and Jooste (1981: 56) point out that such support should involve a whole range of experts. Goldberg *et al*. (Gallagher 1966: 257) state that underachievement is rooted in a variety of personal and social problems. The nature and duration of therapy will depend on the *nature and intensity* of such problems.

The following should be key components of therapeutic support for gifted underachievers:

- Guidance in handling and improving a weak, negative self-image;
- therapy for the relief of anxiety and tension;
- assistance in clarifying a diffuse identity;
- guidance in the constructive channelling of aggression;
- support regarding appropriate personal adjustment;
- support regarding the correction of negative family and peer group relations;
- help in acquiring correct study methods, a positive attitude to study and work motivation;
- guidance in setting realistic educational objectives with a view to a realistic choice of subjects, study direction and vocation.

(b) Provision of special education

The gifted underachiever's special problems make it difficult for him to cope with the ordinary classroom situation and mainstream education. Nor is the problem solved by transferring him directly to a programme for gifted pupils with its more arduous scholastic demands. Gallagher (1975: 353) outlines the problem as follows:

"One way to look at the underachiever is that he is in the middle of a circle of barbed wire. It makes up his total environment, and all the elements of his environment have contributed to the building of this wire circle - his family, his friends, his school, and most important, himself. Any movements that he attempts to make to get out of the barbed wire are going to be *painful* to him. Sometimes it is more comfortable to sit quietly and passively in the middle of his trap and bemoan his own fate than to risk getting scratched trying to get out."

Yet somehow the gifted underachiever has to be eased out of his untenable situation. Special education provision is one of his needs.

The following are some of the factors that need to be stressed in the provision of special education for gifted underachievers (Whitmore 1980-81: 370-371):

* Because of their scholastic backlog they need remedial support to catch up.

* The hypersensitivity and acute powers of observation often manifested by gifted pupils can result in tension, hyperactivity and fluctuating concentration. Special education should take this into account.

* The perfectionism that often characterises the gifted pupil may result in a sense of personal incompetence and unrealistic demands on his part. Such a pupil may come to see himself as a failure. Special education provision should be designed to temper this drive for perfection.

* Because of their independent way of thinking, such pupils may react in unexpected ways. They are often accused of rebellious and disruptive behaviour, and such accusations may induce negative feelings towards the school and education in general. Their unconventionality may even elicit punishment from both teachers and peer group. In the provision of special education it should be remembered that gifted underachievers need a considerable degree of acceptance.

* Because gifted pupils display a lot of initiative and hence are able and eager to make their own decisions, they reject unnecessary limitations and structuring and seek opportunities to express their own feelings and ideas. They therefore need greater freedom to make their own decisions.

* Because of their need for self-expression, self-actualisation and productivity, these pupils may be regarded as stubborn and uncooperative. For instance, a gifted pupil may be unwilling to stop a given piece of work in order to go on to the next, or he may insist on expressing his ideas at inopportune moments. Hence, if he acts in accordance with his own needs, he may well become aware of criticism, disapproval or irritation in others. Because of his high level of creativity, he may also become exceedingly frustrated by the classroom emphasis on convergent thinking and conformity. This too should be borne in mind in the provision of special education for gifted underachievers.

* Gifted pupils have above average problem-solving abilities and their schoolwork may therefore be ahead of their class/group; or they may tend to dominate classroom discussions or be bored by a curriculum that to them appears superficial. Special education provision should reflect the gifted underachiever's need for a more flexible curriculum and modified classroom practice.

* Finally, Whitmore (1980-81: 371) concludes that the gifted pupil's style of learning (which is often geared to analytical thinking and creative exploration) may cause him to react negatively to traditional teaching methods and curricula. Teachers draw the erroneous conclusion that the child is unmotivated or lazy. This problem, too, underlines the gifted underachiever's need for an appropriate curriculum and classroom practice.

(c) Inclusion in special teaching programmes for gifted pupils

Gifted underachievers show a need to be included in teaching programmes for gifted pupils. The ultimate goal in everything that is done for a gifted underachiever should be his inclusion in such a programme. Of course this can only happen once the individual has overcome his psychological and other problems and has wiped out or reduced his scholastic backlog with the help of remedial support.

(4) Therapeutic support for gifted underachievers

(a) Early identification

The first step towards early identification is that all the interested parties - parents as well as teachers - should be made aware of the problem of underachievement. This can be done through *information sheets* clarifying the nature of the problem, its causes and incidence, the characteristics of gifted underachievers and the provision of education for them. These sheets should emphasise the fact that underachievement, particularly among the gifted, is a serious problem with far-reaching negative implications both for the high-level manpower situation in the RSA and for the optimal positive development of the pupil's own learning ability and personal characteristics.

There are other obvious ways of focusing attention on the problem, such as *parent or staff meetings at the school, symposia* and *work seminars*. Such an awareness programme should have two objectives: firstly, by publicising the subject, to mobilise a large group of "identifiers", and secondly, to engender a positive attitude with regard to these pupils and their problems. Given the current widespread negative approach, the latter is an extremely important objective. It should not be forgotten that the success of any special effort in the interests of gifted underachievers, as in the interests of gifted pupils in general, will depend very largely on a positive approach by all concerned: parents, teachers, peer group and the gifted underachievers themselves. It has already been pointed out that these pupils' problems are often ascribed to laziness, stubbornness or antagonism towards their teachers. Although all these factors may indeed be operative, it needs to be stressed that gifted underachievers can have grave psychological problems that may become more acute as time goes by. All interested parties should therefore be made fully aware of the seriousness of the situation.

Another vital necessity is closer liaison between parents and teaching staff. It should be remembered that the parents are still the primary educators. While some gifted underachievers are "difficult" both at home and at school, others manifest their problem behaviour mainly at school. No therapy has any chance of success unless both parents co-operate. Therapeutic support should therefore be seen as a *team effort* involving both parents and teaching staff.

While underachievement among gifted children generally surfaces at the secondary school level, it is crucially important to remember that it is not restricted to that level. It has already been noted (see Par. 4.5) that the problem begins in the primary school and that such a predisposition may even be present when the child first goes to school. As Dowdall and Colangelo (1982: 183) put it: "It is crucial that parents and school pay close attention to youngsters as they begin their schooling. It is in these early years that children must be provided with an atmosphere of success rather than failure in order to foster commitment to applying oneself in school ..." Therefore parents and teachers should be alert to the problem of underachievement, not only in the secondary school, but also at the primary and even preprimary level.

Research findings to the effect that underachievement occurs more frequently among boys (see Par. 4.5) have important implications for early identification. Parents and teachers need to be aware that a high percentage of gifted boys (possibly over 50 per cent) may be underachievers.

The following recommendation is made in view of the importance of early identification: Gifted underachievers should be identified according to the guidelines laid down in this report, and the need for early identification should receive great emphasis.

(b) Value of therapeutic support for gifted underachievers

According to Dowdall and Colangelo (1982: 182), two main approaches can be distinguished in therapeutic support for gifted underachievers. The first approach concentrates strongly on such matters as intensive therapy aimed at the improvement of a poor or negative self-image and the counteraction of inferiority feelings. The second approach is concerned with modifying the teaching-learning situation.

Dowdall and Colangelo (1982: 182) point out that a large number of research projects have shown the first approach to be unpromising, and they conclude as follows: "The summary of research on counseling interventions with UAG indicates that such procedures have not been shown to be *consistent or effective* ..." (own italics). Of the numerous researchers who have investigated this approach, only Doyle, Gottlieb and Schneider have concluded that success is attainable, subject to certain conditions:

* Therapists should be specially selected and trained.
* Each therapist should handle a relatively small number of cases.
* The goals of therapy should be clearly spelled out.
* An effective modus operandi needs to be developed.

According to Dowdall and Colangelo (1982: 182), the second approach too has not yielded encouraging results. Neither a change in classroom activities, reducing the number of pupils per group, homogeneous grouping, nor the selection of suitable teachers has achieved much success, according to several researchers. Dowdall and Colangelo (1982: 182) quote Gold as ascribing this to the fact that such changes were initiated in the *secondary* school, hence too late.

This somewhat pessimistic prognosis is supported by other researchers. Thus Goldberg *et al.* (Gallagher 1966: 257) conclude that therapeutic assistance rendered to gifted underachievers in *secondary* school probably comes too late for many of them. They do, however, cite two factors as crucially important in such assistance:

- Identification of gifted underachievers by an interested, supportive and sympathetic teacher who is aware of their need for support and accepts each child as an individual.

- Appropriate remedial measures to enable gifted underachievers to wipe out their scholastic backlog.

Tannenbaum (1983: 216-218) refers to studies by Mink, Ohlsen and Gazda, Winkler, Teigland, Munger and Kranzler, Finney and Van Dalsel, Goebel, Winborn and Schmidt in which various therapeutic techniques and approaches were employed, expert therapy provided, other interested parties (parents) involved, a variety of therapists employed, and so forth. The success rate was minimal. Gallagher (1975: 355-356) then cites a study by Baymur and Patterson in which three approaches to the problem were investigated:

- Group therapy;
- individual therapy;
- "therapy" in the form of a single motivational talk informing gifted underachievers that they had exceptional abilities and that they should try to actualise them.

The results achieved by individual therapy were not encouraging, but this might have been due to the fact that therapy took place over a relatively brief period. The really important finding was that the third approach *proved totally negative*. Baymur and Patterson (quoted by Gallagher 1975: 356) arrived at the following vitally important conclusion. "It is suggested that it may be better to leave underachievers alone, rather than pointing out their failure to achieve adequately and exhorting them to do something about it." Dowdall and Colangelo (1982: 182-183) agree that support for gifted underachievers is a *long-term undertaking*: "What seems obvious is that programs to help UAG will not work if they are for short periods of time. It would be a saving of money and professional resources to *not even attempt* such short-term measures" (own italics). After all, the gifted underachiever has probably developed his behavioural syndrome over a period of years: instant solutions are obviously out of the question.

It is clear, then, that some researchers take a negative view of the value of therapy for underachievers. However, other researchers such as Cutts and Moseley (1958: 134-137), Abraham (Crow and Crow 1963: 221-225), Roth and Meyersburg (1963: 540), Hildreth (1966: 533), Shouksmith and Taylor, Ewing and Gilbert, McGowan, Perkins and Wicas, and Wittmer (quoted by Tannenbaum 1983: 214-216) are more positive. Gowan and Bruch (1971: 53-54) draw the following conclusions from the literature on the subject:

- Effective results are achieved only by the better therapeutic techniques. The therapist too should therefore be regarded as a variable in the therapeutic situation.

- The therapeutic approach should be tailored to the needs of the individual underachiever.

- Differences in sex and development are decisive factors in the choice of an appropriate therapeutic technique.

- Diagnostic analyses of individual cases ought to help in the selection of appropriate therapeutic techniques.

Gowan and Bruch (1971: 54) are accordingly more optimistic about the possibilities of therapy for underachievers:

"With the trend toward improved specification of the variables in the counseling process, and those associated with the counselor and the counselee as individuals, personnel workers should be better able to do more effective and earlier counseling with underachievers.

From the literature it therefore appears that there is some pessimism regarding therapeutic support for gifted underachievers, particularly if identification, support and special education provision are deferred until the secondary school level. However, the literature may project too pessimistic an image: it has emerged in practice that therapy and special education provision can indeed be successful, provided that

- these are undertaken by the *appropriate* experts;
- there is a multidimensional team approach;
- it is a long-term undertaking (months or even years);
- parents, teaching staff and peer group are all involved.

It is vitally important that past failures in respect of special education provision for gifted underachievers should not discourage fresh initiatives.

(c) Individual therapy

It needs to be borne in mind that individual therapy for gifted underachievers is only one of several solutions to the problem in question. A multidimensional approach would probably have the best chance of success. Whitmore's investigation (1980-81), which was positively reported on in the literature, followed a multidimensional approach and employed therapeutic support, modified classroom practice, case studies and support to parents.

It should also be remembered that a group situation (as in group therapy) might well remind some gifted underachievers of an ordinary classroom situation - the very type of situation they cannot cope with. The therapist has to bear in mind that the nature of the therapy and the general approach should be determined by the needs of individual pupils. Edelston and Grossmann (quoted by Gowan and Bruch 1971: 53) recommend therapy suited to pupil needs, and Gourley (quoted by Gowan and Bruch 1971: 53) found in his research that underachieving boys derive more benefit from individual therapy than underachieving girls.

Again, such therapy also needs to involve the parents of under-

160

achievers (Gowan and Bruch 1971: 53 quote Mink, Shaw, Shouksmith and Taylor in this connection), teachers and the peer group. Because the therapist's role is so important, only selected and qualified persons should undertake the therapy. Brammer and Shostrom (1960: 169) remark that the therapist's *approach to life* is crucially important because the efficacy of therapeutic help has so much to do with the quality of the relationship between therapist and client.

The therapist can of course make use of a variety of psychometric media. Apart from the recognised intelligence tests and scholastic performance tests/proficiency batteries, the following have also proved very useful in practice:

- *The High School Personality Questionnaire (HSPQ)*
- *The Children's Personality Questionnaire (CPQ)*
- *The Thematic Apperception Test* (TAT-Z)
- *The PHSF Relations Questionnaire* (PHSF)
- *The Pauli Test*
- *Draw-a-Man Test*
- *Draw-a-Tree Test*

The following recommendation is made on the basis of the preceding section: Individual therapy for gifted underachievers should be used wherever this appears to be an appropriate therapeutic approach.

(d) Group therapy

A number of researchers (such as Dickenson and Truax 1966: 246-247, Thelen and Harris 1968: 564-565, Chestnut and Spielberger *et al.* as quoted by Thelen and Harris 1968: 563-565, and Broedell, Ohloson, Proff and Southard as quoted by Gallagher (1975: 356) have reported success with a group-therapeutic approach to gifted underachievers. Cutts and Moseley (1958: 137-138) and Gallagher (1975: 356) also regard such therapy as valuable. Gallagher believes that group therapy for gifted underachievers is particularly commendable during adolescence, since it is at this age that pupils often like to exchange ideas with their peers and frequently prefer peer group support to support from adults. In addition a gifted underachiever often finds it reassuring that other pupils' experience problems similar to his own.

According to Nel (1983: 30), group work with gifted underachievers can do much to give such pupils a sense of acceptance and achievement. In such an interrelationship they can experience their own reality as meaningful. Nel suggests the following as components of a groupwork programme:

- Pupils are guided to act and experiment on their own in front of the group.

- Hints and encouragement are given before and after or even, if necessary, *during* action in front of the group.

- Specific exercises are given to iron out problems or mistakes.

161

* Hints are given on effective communication.

* Guidance is given with regard to human relations, coping with anxiety and the nature of knowledge.

* Essential components are the co-operation and punctuality of pupils, thorough preparation and confidence in the programme leader.

The following recommendation is accordingly made:

Given the demonstrated value of group-therapeutic support for gifted underachievers, it is recommended that this method should be used to supplement individual therapy.

(5) Provision of special education for gifted underachievers

Therapeutic support is only one component of an overall system of education provision for gifted underachievers. It was pointed out in Paragraph 4.6.2 (1) that such a system of education provision could be split up into a number of components. These will now be discussed separately, but it *should be remembered that they overlap extensively*. Intensive therapeutic support by a qualified therapist is of cardinal importance, but gifted underachievers also need *special education provision* which combines therapeutic support with remedial teaching to enable them to wipe out their scholastic backlog. Gallagher (1975: 358-360) agrees, pointing out that underachievement cannot be overcome by therapy alone: the teaching-learning situation at school is also a potent factor. Because gifted pupils do not benefit from ordinary mainstream education, they require the common teaching-learning situation to be modified in accordance with their needs.

Goldberg *et al*. (Gallagher 1966: 256) achieved a measure of success in grouping gifted underachievers and providing special education for them. Teachers were selected with care as *capable teachers are the key to success in this type of teaching programme*. Where teachers were not suitable, little was achieved. Goldberg *et al*. (Gallagher 1975: 358) in fact pinpoint the underachiever's chief needs as identification *with* a suitable teacher and adequate help in solving scholastic problems.

Whitmore's study (1980-81) is positively reported in the literature. Whitmore placed underachievers in a special temporary group, partially to improve their self-concept, provide remedial support and improve their work motivation. The comprehensive programme of special education yielded most promising results, which Whitmore attributed to the following factors (p.379):

"1. Releasing the potential power within a group of individuals with similar needs to aid each individual in

(a) raising his/her self-esteem, self-respect, and confidence in his/her ability and work through recognizing and valuing strengths;

(b) developing more realistic self-expectations through knowing others and his/her own potential and present capacity for achievement;

(c) experiencing true belonging in the peer group and school community;

(d) learning to relate effectively socially - in interpersonal relationships with peers and adults;

(e) developing skills for self-governance - self-direction, discipline, evaluation and skills in all types of problem solving, decision-making, and choosing in relation to values.

2. Guaranteeing that children experience success more often than failure in academic tasks through prescriptive teaching.

3. Teaching children techniques for self-treatment - setting reasonable goals, selecting means and materials, evaluating, employing methods of self-modification and self-control.

4. Correcting the learning deficiency - making up for lost time once the psychological obstacles to learning in that area are removed.

5. Developing an exciting curriculum relevant to their interests, meaningful, rewarding and appropriate learning styles."

The main reason for Whitmore's success was probably the fact that he worked with very young children, once again underscoring the importance of early identification of gifted underachievers.

This cursory makes it clear that the provision of special education for gifted underachievers does hold a certain promise.

The following recommendation is therefore made:

Since therapeutic support cannot be the sole form of education provision for gifted underachievers, and in view of the success achieved with special education provision, such education should be provided.

(6) Including gifted underachievers in special educational programmes for gifted pupils

It was shown in Paragraph 4.6.2 (3)(c) that gifted underachievers, because of their exceptional psychological make-up, also need the special education provided for gifted pupils. Clearly they cannot be integrated into such programmes until their psychological problems have been dealt with and their scholastic backlog eliminated or reduced. However, the progress made by a gifted underachiever in such a programme should be carefully monitored, and if it is not satisfactory, the pupil should be withdrawn - obviously in an expert and sympathetic way.

It is therefore recommended as follows:

Gifted underachievers should be incorporated into special educational programmes for gifted pupils once the psychological, scholastic and other problems that gave rise to their underachievement have been dealt with and their scholastic backlog eliminated or substantially reduced.

4.7 CONCLUDING REMARKS

Education for the gifted underachiever remains one of the thorniest problems in the whole area of education for the gifted. It should be clear from the foregoing that the causes of the problem are often obscure or even unknown. Research has, however, made it clear that it is *a grave psychological problem that can have serious results if allowed to persist without timely therapeutic intervention and support*. While the quality of research in this area has not always been satisfactory and has therefore often yielded conflicting or meaningless results, it appears that a *great deal* can be achieved by means of *early identification, expert therapeutic support* and *the provision of special education*. Although a difficult undertaking, it is clearly essential in view of the loss of high-level manpower in the RSA and the important negative implications of underachievement for the optimal positive development of the pupil's own personality and scholastic ability.

It would be very difficult for an education system to meet *all* the needs of *all* the pupils, and so there will probably always be a percentage of gifted pupils who do not fully actualise their intellectual and other potential. For this reason, and because of the shortage of relevant high-quality research, an investigation into the subject should be launched and it should comprise the following components at the very least:

* A comprehensive study of the literature;
* comprehensive empirical research;
* reports on overseas educational practices both past and present;
* extensive consultation with experts working in this field in the RSA, and
* liaison with various bodies/persons/committees concerned with the education of gifted pupils.

Such research could do much to clarify the nature and origins of the psychological and other problems experienced by gifted pupils. It could also contribute to the exploration of possible methods of dealing with the problem. Until such research has been undertaken, devising a suitable educational programme for gifted underachievers will be virtually impossible. It should be noted, however, that the simple fact of alerting society to the existence of the problem (the grave psychological and other problems plaguing the gifted underachiever and the importance of early identification, intensive therapeutic support and the provision of special education - in short, *the formation of positive attitudes* with regard to gifted underachievers) is one of the most important first steps towards its solution.

CHAPTER 5

SCHOOL GUIDANCE FOR GIFTED PUPILS

5.1 PREMISE, STATING THE PROBLEM AND RESEARCH OBJECTIVE

5.1.1 Premise

To ensure adequate education for all groups of pupils, including gifted pupils, an education system should provide differentiated education. The HSRC Work Committee: Education for gifted pupils is attempting to achieve just such education for this group of pupils. However, since any effective system of education provision leans heavily on supportive auxiliary services (of which school guidance is only one), *the provision of education for gifted pupils should recognise the importance of school guidance as a supportive auxiliary service*. That is the subject of the present chapter.

Certain assumptions need to be made in order to arrive at a suitable premise for such an inquiry:

- Firstly, that the gifted pupils in question have already been identified by pedagogically/educationally valid means, and can rightly be considered gifted;
- secondly, that such pupils remain within the formal teaching situation and therefore need school guidance within that framework;
- thirdly, that they are drawn from both sexes and all population and cultural groups;
- finally, that they are enjoying some form of enriched education either inside or outside mainstream education.

5.1.2 Stating the problem

School guidance is a *supportive auxiliary educational service*, not merely a "school subject" taught purely in terms of content at set times. *School guidance as an auxiliary service is in fact primarily designed to support pupils in their educative experience in order to ensure that their progress to adulthood will proceed optimally.* This implies a form of school guidance based very largely on *individualisation* in order to meet the unique needs of each and every pupil.

In respect of gifted pupils, the question is therefore *how to present school guidance in such a way that it will indeed render an auxiliary educational service to these pupils*.

5.1.3 Research objective

The objective of this section is to consider the type of school guidance that should be provided for gifted pupils. Since it is plainly impossible to present a *detailed* exposition of the subject in the course of a single chapter, the emphasis will be on laying down some crucial guidelines.

The rationale of this chapter is that school guidance for gifted pupils should have the same basis as school guidance for other pupils. In other words, the scientific basis of school guidance is a constant, regardless of the envisaged target group of pupils. However, the *operationalisation of, say, objectives* for a given group of pupils will necessarily accommodate and reflect the unique needs of that group.

5.2 CHARACTERISTICS AND NEEDS OF GIFTED PUPILS

5.2.1 Introduction

It has already been noted that school guidance for gifted pupils should be based on the same considerations as school guidance in general. However, it can be inferred from the nature and object of school guidance that the specific needs of pupils (gifted pupils in this case) have to be considered *if school guidance is to be a successful auxiliary educational service. School guidance for the gifted is absolutely essential*. Van der Walt (1983: 2) states that gifted pupils often require *more* help and support than others by *reason of* their giftedness. The editor of *The Gifted Child Quarterly* (1977: 155) agrees: "Guidance is essential if we are to help gifted children become more creative ..."; and Gowan and Bruch (1971: 37-38) maintain:

"Despite the prevalent idea that able students do *not* need counseling that they are bright enought to handle their own problems, several authors *have rejected this assumption* (Passow *et al*. 1955; Barbe, 1954). It has been the experience of the authors that gifted children profit *greatly from counseling* at the elementary and junior high levels ... ." (Own italics)

Clearly, the gifted pupil too is in need of effective school guidance and all it implies, and it stands to reason that such guidance should be provided throughout his or her school career. To ensure effective and efficient school guidance for gifted pupils, Gowan and Bruch (1971: 33-34) and Zaffrann and Colangelo (1977: 305-321) stipulate that neither these pupils' unique needs nor their development to adulthood should ever be overlooked. These topics will now be discussed in order to arrive at meaningful proposals concerning school guidance for gifted pupils.

5.2.2 Some characteristics of gifted pupils

Since the characteristics of gifted pupils are discussed in greater detail in Chapter 3 and in the addenda to this report, the current section will be restricted to certain general characteristics that may be relevant to school guidance. Jordan and Keith (1965: 136-140), Khatena (1977: 372-387; 1982: 33-103), Martinson (1978: 20-26), Renzulli (1978: 180-184), Gouws (1983: 10-20) and others have pinpointed the following characteristics *among others*:

* Gifted pupils display superior general and/or specific intellectual ability, usually manifested in exceptional scholastic and/or cultural achievement.

- They frequently show *exceptional aptitude, interest, skill and ability in some specific area*.

- Gifted pupils frequently possess

  - excellent powers of concentration,
  - great retentiveness,
  - wide-ranging (and often unusual) interests,
  - extensive knowledge about a variety of subjects,
  - excellent powers of problem identification and solution,
  - outstanding ability to abstract, analyse and synthesise, and the ability to perceive causal relationships,
  - a capacity for independent and original thought,
  - an alert, observant attitude,
  - exceptional linguistic endowment and skills,
  - exceptional aptitude in the visual and performing arts.

- They often display the following personal characteristics as well:

  - a positive self-image and independence of action and conduct,
  - outstanding leadership potential,
  - a highly developed sense of moral and ethical responsibility,
  - future-directedness and idealism,
  - order and integration in their thought and behaviour,
  - a healthy sense of humour.

- Gifted pupils frequently display exceptional creative ability in the sense that they are

  - imaginative, resourceful and capable of original ideas
  - able to elaborate on ideas and to integrate a basic theme and supplementary ideas into a single whole,
  - able to perceive a variety of solutions to the same problem,
  - willing to be involved in complex issues,
  - willing to exceed the limits of an assignment and do more than is required of them,
  - self-confident enough to question what is generally accepted, and
  - interested in unconventional careers.

It can be inferred that gifted pupils *in general* are more mature than other pupils in spheres such as the cognitive, the affective and the normative.

As already stated, the above list is merely a selection of general characteristics that may be manifested by gifted pupils. It forms the broadest of frameworks for this section in the sense that giftedness will be interpreted in terms of these characteristics.

5.2.3 The gifted pupil en route to adulthood

School guidance has to be given in accordance with a pupil's ability, aptitude and interests, which implies differentiation. It may be added, quoting Zaffrann and Colangelo (1977: 305-321), that school guidance should take into account the pupil's level of development.

It follows that the school counsellor should know and understand each pupil's *unique* development to adulthood. In the case of gifted pupils it can be inferred from preceding sections that *especially their cognitive* but probably also their *affective, normative and social* development will be *more rapid* than that of the average pupil. For example the gifted pupil's cognitive development *may* be such that he will be capable of cognitive thinking well beyond the capacity of the average pupil in his age group.

However, the gifted pupil's progress to adulthood, like any other child's, will naturally depend on the education he receives. Faulty education can inhibit development. Insecurity, environmental deprivation, inadequate cognitive stimulation and a poor normative example are possible factors in this regard.

5.2.4 Distinctive needs of gifted pupils

"Gifted children have the same basic needs as all children: security, love, belongingness, and other elements of basic trust and acceptance" (Gowan and Bruch 1971: 33). Van der Walt (1983: 5), while agreeing with this statement, points out that gifted children display *additional needs*. The gifted pupil is a human child with all the ordinary human potentialities and needs. If pupils in general require school guidance in accordance with their individual needs, so do gifted pupils. Like other pupils, they will require aid and support designed to help them actualise their potential as human beings.

However, this potential will differ both qualitatively and quantitively from that of the average pupil, and therefore school guidance for the gifted pupil will also have to be different. As Zaffrann and Colangelo (1977: 309) point out: "Nothing is more unequal than the equal treatment of children with unequal needs and talents."

Certain general categories can be distinguished in the needs of gifted pupils:

- Social and educational needs;
- needs relating to the development towards adulthood;
- vocational and career needs;
- characteristic needs of gifted girls, and
- the need for appropriate knowledge and skills to meet the demands of the future.

It is patently impossible to deal in detail with all the needs in these various categories. At best a few needs can be pinpointed in each category.

(1) Social and educational needs

Given the characteristics that have been ascribed to gifted children, such pupils may *in general* be expected to manifest *less* problem behaviour and *fewer* behavioural disorders than the average pupil (see Par. 5.2.2 and 5.2.3). This does *not* mean that they will display no social or educational needs. In fact a number of researchers (cf. Gowan and Demos 1964: 265-268; Gowan and Bruch 1971: 34-37;

1982: 173-176) assert that gifted pupils may indeed display problem behaviour if their needs are not adequately met.

Gowan and Demos (1964: 244-247), Gowan and Bruch (1971: 34-37) and Van der Walt (1983: 5-9) distinguish the following social and educational needs in the case of gifted pupils:

* The need to know and accept their own abilities, interests, aptitudes, personality traits and shortcomings
    - A gifted pupil may not be aware of the extent and quality of his own abilities and shortcomings. The problems of gifted pupils (such as a poor self-image, underachievement and unrealistic goals) often result from a poor or unrealistic grasp of their own potential and limitations.

* The need to perceive and accept the abilities, interests and shortcomings of *others*
    - In practice, gifted pupils have to communicate with other pupils (including the non-gifted). Their eventual ability to form social relationships will depend very largely on their ability to accept and cope with this situation. The inability to communicate with superiors and peer group that is sometimes found in these pupils may be due to their unawareness that others are unlike themselves.

* The need to explore, discover and create
    - Gifted pupils need time to express their interests in practice, clarify their values and even daydream productively. Their gratification of these needs may well prove irritating, since they will constantly be asking questions, querying precepts and deviating from prescribed lines of thinking and behaviour. An effective school guidance programme should be designed to steer the creativity of such a child into meaningful channels.

* The need for effective problem-solving skills
    - The exceptional cognitive ability of gifted children does not *guarantee* effective problem-solving skills. These pupils have to acquire the ability to study, to think critically and to take decisions if they are to achieve their ideals.

* The need to work independently and to take part in decision making
    - Because gifted pupils often show a need to work independently and do not always respond positively to interests or enterprises initiated by other pupils, they may not be fully accepted by their classmates. Effective school guidance should help them strike a healthy balance between their own activities and constructive interaction with others.

* The need to set realistic goals, to evaluate realistically and to use their gifts constructively

  - Gifted pupils often tend to be perfectionists intent on producing nothing but faultless work. Such an approach can lead to a sense of incompetence and inadequacy and ultimately to grave psychological problems. They should therefore be helped to set realistic goals.

* The need to be challenged

  - Gifted pupils in the ordinary school situation may find that their work does not challenge them to mobilise their full potential. This may result in boredom and a negative attitude to schoolwork. School guidance should inculcate commitment and the class/subject teacher should be provided with appropriate educational programmes to confront these pupils with subject matter that presents a real challenge.

* The need to develop specialised interests

  - The interest patterns of gifted pupils are often very different from those of average pupils. They may also show intense interest in a specific subject, neglecting other areas/subjects. School guidance should take this possibility into account.

* The need of greater latitude for self-actualisation

  - Gifted pupils have a greater potential for development than average pupils. This has important implications for self-actualisation.

* The need for appropriate identification figures

  - Because they are better able to assess values and norms and hence the normative examples set by others, gifted pupils often have difficulty in finding suitable identification figures. They have a highly developed capacity for evaluating available identification figures (and sometimes rejecting them as inadequate).

* The need to *remain a child* despite exceptional personal potentialities

  - Gifted children are often seen as miniature adults and subjected to adult demands. It needs to be remembered, in school guidance as elsewhere, that such pupils are no less children en route to adulthood than any other children.

* The need to understand parent and teacher attitudes

  - Adults often confront a gifted pupil with unrealistic expectations, either overestimating or underestimating the child's abilities. Sometimes a gifted pupil is expected to excel in *everything* he undertakes - an impossibility in terms of what is known about the psychological make-up of a gifted pupil. Then, too, parents may experience problems in handling their gifted children and end up treating them differently from other children. In such cases parents, children and even teachers are in need of guidance.

- * The need for appropriate social relationships

  - Because gifted children often show leadership potential, they are sometimes expected to handle their social relationships more effectively than other pupils. However, the development of leadership potential and the ability to establish social relationships is not something that happens automatically. Inability to lead, as well as undesirable behavioural phenomena such as withdrawal or overreaction, may well be due to ineptness in establishing social relations. Too often a pupil who has been identified as gifted becomes alienated from his peers - a state of affairs that should certainly be avoided if satisfactory social relationships are to be achieved.

- * The need to acquire appropriate values

  - The gifted pupil's intensive quest for information, knowledge, understanding, beauty, truth, reason, meaning and the more elusive perspectives on various issues may result in disillusionment and rebellion against the established norms and values of society. Such a child tends to demand *honesty* from others as well as from himself. In modern society, professed values are not always those that are actually practised. A gifted child is more capable than his peers of perceiving and evaluating such contradictions, which can greatly impede the development of a personal philosophy of life and proper values.

To deny these needs is obviously to court problems. For example a number of researchers including Gowan (quoted by Gowan and Demos 1964: 266-267) and Gowan and Bruch (1971: 34-37) maintain that gifted children display behavioural phenomena such as isolation, insecurity, revolt against authority, poor parent identification, anxiety, tension, scholastic and other forms of underachievement and various types of behavioural disorders.

Exceptional creativity is pinpointed by several researchers (among them Gowan, Khatena and Torrance 1981: v) as one of the most potent and unique of human characteristics. Rogers (1969: 356) says about the development of creativity: "From the very nature of the inner conditions of creativity it is clear that they cannot be forced, but must be permitted to emerge." This calls not only for psychological security but also for a considerable measure of psychological freedom. The traditional formal mainstream education does much to inhibit the development of creativity. As Khatena (1982: 179) puts it: "As important as formal education is to children's creativity as they grow up, there comes a point beyond which an overcommitment to tradition inhibits creative functioning."

The inhibition of a gifted pupil's creativity often has drastic negative results. According to Khatena (1982: 189), it not only means the loss of these abilities to the individual and to society; it also produces grave learning and behavioural impairment as well as neurotic and even psychotic behaviour. He goes on to say (1982: 190): The creative individual who has his productivity blocked may develop behaviour traits similar to those of psychotics whose reaction to reality may be very much like the behaviour of the paranoid

171

personality in some respects, or his behaviour might become withdrawn or schizophrenic."

It should be clear that gifted pupils have a considerable need for help and support in the area of social and educational needs.

(2) Needs relating to the development towards adulthood

It was pointed out in Paragraph 5.2.3 that gifted pupils do not necessarily develop in the ordinary way. It follows that this possibly unconventional progress to adulthood may constitute a need in itself. According to Gowan and Bruch (1971: 34), gifted pupils have at a very early age been found to display an awareness of existential problems, a questioning of values and norms and a need to discover the meaning of life and of their own being. Their progress to adulthood appears to take longer and to extend further than that of the average child. Their openness to impressions at an early age makes them more sensitive to their own reactions and those of others. On the one hand their predictably more rapid development will call for certain kinds of help and support; on the other hand specific needs will be created by educational obstacles such as unsound educational relationships in the family or experiential deprivation. In this area, too, school guidance is patently essential.

(3) Occupational and career needs

In one area above all the gifted pupil has a need for support and guidance: the choice and planning of an occupation and career. This need is highlighted by the following factors (Khatena 1982: 204-205):

* The mistaken assumption that gifted pupils can achieve *whatever* goal they set themselves - in other words, can make a success of any occupation.

* The premature channelling of the gifted pupil into a certain occupational field because of his proficiency in and choice of certain school subjects.

* The problems experienced by some gifted pupils in reconciling their value systems with those of other people.

* The search for a career primarily as a means of earning a living rather than of achieving *self-actualisation*.

* The conflict between exceptional achievement and the response and acceptance elicited from others.

* The tendency of gifted pupils to lose themselves in detail without grasping the overall picture.

* The problem of delayed psychosocial satisfaction in some areas because of a longer period of education.

- The significant psychological and other changes engendered in an individual during his training for an occupation, and the changes brought about by the occupation itself.

- The assumption made by many gifted girls that marriage and a career are mutually exclusive, which leads to unnecessary compromises.

The root problem of the gifted pupil's occupational and career planning needs lies in the wide variety of options open to such a pupil on account of his exceptional abilities. The problem is compounded by the fact that at certain developmental stages he feels *obliged* to choose a particular occupation because it is chosen by other pupils.

It should therefore be accepted that gifted pupils have a pronounced need of aid and support in the area of occupational and career planning.

(4) Characteristic needs of gifted girls

According to De Klerk and Nieuwenhuis (1983), the traditional image of the woman as the homemaker, the one who looks after the family, has become largely obsolete in contemporary society. Even so, many girls have the notion that a career and marriage are in some sense incompatible, and this causes them to settle for unnecessary compromises in their occupational and career planning. Gifted girls in particular may, according to Khatena (1982: 228-229), experience this as a real problem. The role of women in modern society is therefore another area in which gifted girls need help and support.

(5) The need for appropriate knowledge and skills to meet the demands of the future

While all pupils need to be adequately prepared for the future, gifted pupils will be subject to special demands. This, too, will have to be taken into account in school guidance.

5.2.5 Perspective

In the previous section an attempt was made to focus briefly on certain personal characteristics and needs of gifted pupils with a view to making recommendations in the next section. It needs to be stressed once again that school guidance for gifted pupils should take due account of the unique needs and potentialities of each and every pupil.

5.3 RECOMMENDATIONS REGARDING SCHOOL GUIDANCE FOR GIFTED PUPILS

5.3.1 Introduction

This investigation takes as its premise the view that school guidance for gifted pupils should be based on the same considerations as school guidance in general. It follows that the object, nature, and extent of such guidance, and the way in which it is implemented, should be the same as that for all other guidance. In the light of Paragraph 5.2 it is clear that school guidance needs to be presented in a way that takes into account the needs and personal characteristics of gifted pupils. The following recommendations are designed to put these principles into practice.

5.3.2 Aim of school guidance for gifted pupils

School guidance for gifted pupils should function as an auxiliary educational service designed to meet the special needs of gifted pupils and to help and support them in the optimal actualisation of their potential. Therefore, according to Van der Walt (1983: 9-13), school guidance for this category of pupils should be geared to the following specialised goals:

* Gifted pupils should be guided towards self-exploration, self-knowledge and self-understanding - in other words, towards a realistic discovery and acceptance of their inherent abilities, interests, personality traits and physical potential.

* They should be guided in the optimal development of abilities with a constructive potential.

* They will need support if they are to manifest aspirations and ideals congruent with their exceptional abilities.

* They should be helped by means of school guidance to respect their own dignity and that of others - a respect that should be reflected in their attitudes, conduct and disposition. They need to realise that they are part of a community and of a nation, and of one nation in a community of nations.

* They should be helped to realise that what they learn, what enriches their development, is a potent determinant of their personal approach to life. They should also be helped to form a specific attitude to life and to live according to their religious convictions.

* School guidance should enable gifted pupils to make independent moral choices and to take responsibility for such choices. The following types of support should be provided:

  - Information concerning subject choices, subject combinations, possible school and study directions and eventual occupational choices;

  - assistance in the choice of a teaching programme consonant with the individual's own aptitude and interests;

  - assistance in deriving maximum benefit from the school situation and in realising the importance of optimal actualisation of potential;

  - support in selecting activities that will offer a challenge;

  - assistance with the development of an effective work programme;

  - support in meeting as effectively as possible the progressive demands of special educational programmes for the gifted.

- Gifted pupils should be helped to make a realistic occupational choice and to embark on a career positively and with a mature sense of motivation, adventure, responsibility and self-reliance. Assistance will be required in the following areas:
    - Identifying and being aware of exceptional abilities as well as shortcomings regarding certain occupations;
    - making a tentative occupational choice or choices in accordance with their own ability, interests and personal characteristics;
    - making a thorough study of the occupational requirements of a possible career and assessing themselves objectively in terms of these requirements;
    - achieving scholastic success in school subjects related to a possible occupation;
    - choosing hobbies and extracurricular activities related to a possible occupation;
    - the provision, whenever feasible, of practical experience in possible occupation(s) by means of visits, conversations, holiday work and so forth.

5.3.3 Nature of school guidance for gifted pupils

School guidance should proceed with due regard to the specific needs of gifted pupils and the goals of school guidance. In other words, it should be presented in such a way as to

- promote learning, teaching and orientation;
- provide information;
- ensure liaison and co-ordination in the presentation of guidance services;
- provide help.

To achieve these aims, school guidance for gifted pupils should be an informative, supportive, diagnostic, therapeutic, preventive and occupational placement service presented in such a way that

- communication problems at home, in the classroom and in the peer group situation will be identified and remedied timeously;
- the social, affective and cognitive characteristics of gifted pupils will be understood and the pupils themselves supported in the optimal actualisation of their potential;
- gifted pupils will be helped to develop their unique creative abilities;

- their learning and progress towards adulthood will be optimised and freed of inhibiting influences;

- gifted pupils who are not fully actualising their potential will be identified and helped towards complete self-actualisation;

- adequate vocational guidance will be provided, including adequate and appropriate information on possible occupations and guidance towards self-knowledge and self-understanding, enabling pupils to form a reliable idea of the occupations best suited to them;

- their ability to choose will be developed;

- the unique needs of gifted girls (particularly in the matter of choosing a career) will be met.

5.3.4 Extent of school guidance for gifted pupils

School guidance is intended to meet pupils' need for guidance across the whole spectrum of their educational experience. Thus school guidance should be provided, at the primary as well as the secondary level, in respect of the pupil's

- personality structure;
- social situation;

- establishment of relationships;
- leisure activities;
- development of a self-image and an occupational image;
- educational and career actualisation.

These criteria should apply equally in the case of gifted pupils, and a distinction should be drawn between *general school guidance* and *vocational guidance*.

5.3.5 Recommended ways of providing school guidance for gifted pupils

When gifted pupils are taught in a separate institution *outside* the mainstream, school guidance can be provided in a group context. When they are taught within the mainstream, however, group guidance may not *necessarily* meet their unique needs. In such a case *group counselling* should be strongly considered. In other words, all the gifted pupils in a given standard could be brought together and counselled as a group. Such a method has the following advantages:

- More pupils can be counselled in the available time.

- Gifted pupils will experience their unique traits, needs and problems as less problematic if dealt with in a group context.

- Their exceptional abilities can be constructively utilised by helping them solve their problems themselves, which will in turn promote the optimal actualisation of their potential.

Individual guidance (by means of interviews) shall still form an important part of school guidance for gifted pupils - particularly in the case of gifted pupils with special problems.

5.3.6 Perspective

An attempt has been made to lay down certain guidelines for the provision of school guidance for gifted pupils. Since a great many aspects of education for these pupils still have to be clarified, it has not been possible to provide guidelines in such areas.

The following points should be noted:

* If gifted pupils are to be taught outside the mainstream, school guidance curricula should be designed for them. If, however, they remain in the mainstream, ways should be found of modifying the existing curricula to meet their needs.

* If school counsellors are to play a part in the identification of gifted pupils and the provision of school guidance for them, their training should be adapted to qualify them for this role.

* The highly specialised role of the school counsellor (guidance teacher) in the education of gifted pupils needs to be clarified - in other words, his information, liaison and co-ordination functions should be defined.

5.4 CONCLUDING REMARKS

It is hoped that this chapter will make a constructive contribution to the provision of more appropriate education for gifted pupils. School guidance plays a vital part in helping these pupils towards optimal self-actualisation and consequently in meeting the high-level manpower needs of the RSA.

CHAPTER 6

FORMING PARENTAL AND TEACHER ATTITUDES TOWARDS GIFTEDNESS, GIFTED PUPILS AND EDUCATION FOR THE GIFTED

6.1 ORIENTATION, STATING THE PROBLEM AND RESEARCH OBJECTIVE

6.1.1 Orientation

Since giftedness is a complex, multifaceted and contentious subject on which opinions can differ widely, there is a good deal of ignorance - and consequently even indifference - on the subject among parents, teachers and pupils. Parents and teachers frequently do not know *which* are the gifted pupils, *what* their needs are, *how* they differ from other pupils, *how* they should be approached in the educational situation and whether they should be treated differently from other pupils. As a result, gifted pupils are often deliberately or unconsciously ignored and their needs overlooked, so that many end their school careers without attracting attention. Their exceptional intellectual and other potential never comes to positive fulfilment; in some cases it may even develop negatively.

Chapter 3 and the addenda to this report make it clear that gifted pupils have exceptional characteristics and needs. Their cognitive, affective, conative, social and other development is clearly unique, resulting in unique demands on the educational relationship. Such demands can lead to tension, conflict, and in the end, a negative attitude - particularly in the case of gifted pupils with exceptional creative powers. Research has demonstrated that the qualities and needs of gifted pupils are often *overlooked*. This unfortunate state of affairs is only too likely to bring gifted pupils into conflict with their teachers, thereby disturbing the educational relationship between them.

Parents too, as primary educators, need to be capable of establishing an educational relationship which will optimise the manifestation of a gifted child's potential. Such a relationship depends on a positive attitude or orientation with regard to giftedness, gifted pupils and education for gifted pupils.

When parents and teachers understand the nature of a gifted child, approach him positively and know how to handle him, an adequate educational relationship can be established. The formation of positive parental and teacher attitudes towards giftedness, gifted pupils and education for gifted pupils is a top priority that will probably make a decisive contribution to the effective education of such pupils.

6.1.2 Definition: attitudes and how they are formed

According to Kritzinger, Labuschagne and Pienaar (1971: 196), the word "attitude" denotes a mind-set, mood or disposition. Gouws *et al*. (1979: 102, 124) define it as a relatively stable and lasting acquired disposition to act or react in a specific manner to certain persons, objects, institutions or issues. It also denotes a constant psychological and/or neural state of readiness to react positively or negatively to certain objects or classes of objects. According to Gouws *et al.*, attitudes imply a tendency to classify or categorise and therefore comprise cognitive, affective and behavioural components.

Taking these definitions into account, *attitude* can be defined for the purposes of this report as a specific approach, orientation or disposition manifested in the educational relationship by parents and teachers towards giftedness, gifted pupils and education for gifted pupils. The term *attitude formation* denotes the action by which such an approach, orientation or disposition is brought about.

6.1.3 Stating the problem

It happens far too frequently that teachers, parents and society in general display a negative attitude towards giftedness, gifted pupils and education for gifted pupils - an attitude that manifests itself in feelings of apathy, even antagonism, and scepticism about the need to pay special attention to these pupils (Butler, Gibson and Chennells 1976: 169; Newland 1976: 35; Woodliffe 1977: 5-6). Unless positive attitudes are formed in parents and teachers, it is virtually impossible to establish an educational relationship that will facilitate the optimal and positive development of a gifted pupil's potential. As a result, exceptional intellectual and other potential is lost both to the pupil himself and to society - a state of affairs that the RSA with its shortage of high-level manpower can ill afford.

This chapter is concerned with the formation of positive parental and teacher attitudes towards giftedness, gifted pupils and education for gifted pupils which will make it possible to establish an adequate educational relationship within which the education of gifted pupils can be optimised.

6.1.4 Research objective

The literature makes it clear that the characteristics and needs of the gifted correspond to some extent with those of average pupils. However, it is also clear that gifted pupils manifest dissimilar, distinctive characteristics and needs that call for special education. Such education cannot be provided unless a proper educational relationship is established. As noted above, gifted pupils often display characteristics and needs that can impair this relationship by generating tension and conflict between pupils and their parents and teachers. It is essential, therefore, to ascertain which parental and teacher attitudes, orientations or dispositions towards giftedness, gifted pupils and education for gifted pupils will promote the right relationships, what strategies will help to bring it about and what guideliness for dealing with such pupils should be provided to parents and teachers.

The research goal can therefore be formulated as follows:

* To determine which parental and teacher attitudes, orientations or dispositions in respect of giftedness, gifted pupils and education for gifted pupils will promote an adequate educational relationship;

- to determine which strategies will help to promote such attitudes;
- to provide guidelines to parents and teachers for dealing with gifted pupils.

6.2 AIM OF FORMING PARENTAL AND TEACHER ATTITUDES TOWARDS GIFTEDNESS, GIFTED PUPILS AND EDUCATION FOR GIFTED PUPILS

The aim of forming the aforementioned parental and teacher attitudes can be defined as the establishement of a positive approach to giftedness, gifted pupils and education for gifted pupils which will make it possible to build up an adequate educational relationship as a basis for the education of these pupils.

6.3 FORMING POSITIVE PARENTAL AND TEACHER ATTITUDES TOWARDS GIFTEDNESS, GIFTED PUPILS AND EDUCATION FOR GIFTED PUPILS

6.3.1 Hallmarks of a positive attitude

Jacobs and Vrey (1982: 14-16) describe education as an interpersonal activity that constitutes an encounter between educator and educand. Such an encounter calls for a specific attitude and affective orientation comprising the following key components:

- Love: If the educand experiences love, there will be a sense of warmth, acceptance, affection, closeness and security.
- Knowledge: Love without knowledge is impossible. The educator's whole activity and concern imply an empathy with the educand's experiences which will enable him to interpret them from the latter's point of view. Such knowledge implies far more than a merely objective knowledge and intellectual insight: there is a considerable affective component as well.
- Care: Knowledge implies care. When a positive attitude is formed, educator and educand show concern for one another's welfare, health, joys and troubles.
- Respect: Respect implies mutual acceptance in an active and positive sense. A positive attitude is marked by the recognition of the other party's integrity and dignity and an absence of ridicule or denigration.
- Trust: Without trust there can be neither love nor security. An educand's trust is secured by the consistency of the educator's support and provision for the educand's needs. Hence trust implies a belief that past experience will be repeated. Because the educator is trustworthy, the educand learns to trust himself in the same way.
- Honesty: Honesty is an important condition for authentic education. One of the things it implies is the communication of authentic feelings. Unauthentic communication has no part in the relationship between educator and educand.

6.3.2 Strategies for forming positive parental and teacher attitudes towards giftedness, gifted pupils and education for gifted pupils

(1) Introduction

The following strategies can be employed in the formation of positive attitudes:

(a) Knowledge of the nature and essence of giftedness

Knowledge of the nature and essence of giftedness can be a decisive factor in eliminating prejudices, misunderstanding and errors and replacing them with positive attitudes. It can help parents and teachers realise that every gifted pupil, being unique, *has a unique experiential world*; and that his intellectual and other endowment, though exceptional, is not a *supernatural* gift that renders education unnecessary.

It is therefore imperative that parents and teachers should be well informed about the definition and categorisation of giftedness.

They need to know that these pupils, because of their uniqueness, may manifest their intellectual and other potential in individual ways and in a variety of areas. Parents and teachers should also know how gifted pupils can be identified and what contribution they themselves can make in this respect.

(b) Knowledge of special education provision for gifted pupils

In the area of special education provision for gifted pupils, too, knowledge of the subject can serve to eliminate the negative attitudes and dispositions referred to in Paragraphs 6.1.1 and 6.1.3. It is vital for parents and teachers to realise that

* all education (including education for gifted pupils) should be designed to meet the pupils' needs;
* the needs of gifted pupils cannot be fully met by the "traditional" curriculum, educational forms and strategies and ordinary mainstream teaching;
* the distinctive needs of gifted pupils can best be met by providing special education;
* education for gifted pupils is designed to meet their *unique* needs and not to give them an unfair advantage over average pupils or to establish an intellectual elite group;
* they need to understand the nature of special education provision for gifted pupils, and the general principles and aims of developing curricula for such pupils;
* the aim of providing education for gifted pupils is not a one-sided development of their abilities but rather the actualisation of the total potential of the person as a whole.

(c) Knowledge of the characteristics and needs of gifted pupils

The unique characteristics and needs of gifted pupils will make certain demands on education provision, and will require an adequate educational relationship as a basis for such provision. It stands to reason that parents and teachers should be thoroughly acquainted with these characteristics and needs as such knowledge can be a crucial factor in the formation of attitudes.

(d) Knowledge of the human urge to excel

Since this subject has already been discussed in Chapter 4, it will suffice to remark that parents and teachers should guide gifted pupils in such a way as to stimulate and accommodate their need to excel. In the interest of positive attitudes they also need to understand the nature of the human urge to excel and how to awaken this urge.

(e) Knowledge of the development of the self, self-concept formation and self-actualisation

The above factors play a decisive role in the optimal, positive development of potential, and a sound knowledge of them is essential to the formation of positive parental and teacher attitudes towards giftedness, gifted pupils and education for gifted pupils. This subject, too, was fully covered in Chapter 4 and will receive no further attention here.

(f) Knowledge of how to establish an educational relationship that will optimise the actualisation of potential

According to Landman (Landman, Roos and Mentz 1979: 58-63), the educational relationship between teacher and pupil has certain highly specific pedagogic properties. Since the school can be regarded as an extension of the home, hence of the parents as primary educators, the same properties should characterise the educational relationship between parents and children. While this and previous sections apply to the teaching and education of *all* pupils, the needs and characteristics of gifted pupils give the educational relationship a *fresh significance* of which parents and teachers need to be aware. According to Landman, the following are hallmarks of this relationship:

1) Understanding

a) Understanding the nature of a child

An educator should *know* the educand entrusted to him. Such knowledge should include the following components:

* Understanding the child's distinctiveness: Every child wants to be a person in his own right. Therefore the educator should attempt to understand each child individually.

* Experiencing the child's distinctiveness: The child needs to feel that the educator is aware of him as an individual who is different from other individuals.

- Interpretation of potential: An educator should help the pupil to discover and understand his own potential.
- Development of potential: The pupil should be helped to exploit his positive potential.
- Appreciation of potential: The child should be helped to value his own talents.

b) **Understanding the demands of propriety**

Both pupil and educator are subject to certain rules, and the former should be helped to understand the following points:

- The authoritativeness of the demands of propriety: The child should understand and accept that he is indeed subject to certain rules.
- The demands of human decency: The child should understand these demands in order to be accounted a decent human being, and should comply with them.
- Responsibility: The child should meet the obligation to choose and act, and should learn to be accountable for his choices and actions.
- The need for proper exertion: The child should understand that he is always expected to do his very best in every activity he takes part in.
- The need for obedience: The child needs to understand that he has to do as he is told.

2) **Trust**

The following are hallmarks of the educational relationship between educator and educand:

a) **Esteem (respect) for the child's dignity**

Respect for the child as a fellow human being takes the following forms, among others:

- Respect for individuality: Educators need to remember that all children are not the same.
- Esteem based on the actualisation of values: The child should be appreciated as a participant in the actualisation of highly prized values.

b) **Acceptance: the willingness to enter into a relationship**

The educator's willingness to enter into a relationship with the child is expressed in the following ways:

183

* Initial act of acceptance: It is impressed on the child that the aim is to support him.

* Bonding: An intimate bond is formed between educator and educand.

* Humaneness: The educator should always be humane in his dealings with the child.

* Addressing-listening: The child should be addressed clearly and he should listen attentively.

* Respect: The child should be treated with respect, consideration, appreciation and an awareness of his unique individuality.

* Supportiveness: The educator should demonstrate his desire to support the child.

* Companionship: The educator should demonstrate that he wants to guide the child.

* Participation: The child should be permitted to take an active part in worthwhile activities.

c) The intention of caring

The child needs to sense that the educator really wants to watch over his interests in ways such as the following:

* A secure place: The child should experience his classroom (and home) as a place where he is gladly cared for.

* Acceptance situation: Opportunities should be created for the child to feel welcome.

* Concern based on love: The child needs to sense that he is cared for out of sheer goodwill, not for ulterior motives.

* Loving action: The child should be shown affection by

  - making a home: providing a place where he can feel at home

  - creating closeness: personal closeness is established by eliminating all traces of remoteness

  - inclusion in a fellowship (togetherness): The child needs to be included in a fellowship in which he can think of "us" (as distinct from "them")

3) Authority

The following points are characteristic of the proper mode of togetherness that should be experienced by educator and educand:

* Amenability: The educator specifies what is proper and the child permits himself to be persuaded.

- Being addressed: The educator addresses the child about the demands of propriety.

- Being summoned: The child is summoned and encouraged to do what is proper.

- Obedience: The child is willing to listen to and carry out meaningful commands.

- Recognition of authority: The child sees and concedes that the educator is entitled to prescribe what is proper.

- Emulation of authority: The child needs to follow the explanation and example of propriety offered by the educator.

- Submission to the authority of norms: The authority inherent in the demands of propriety is recognised.

6.3.3 Guidelines for parents and teachers who deal with gifted pupils

The previous sections indicated strategies for the formation of positive attitudes. However, parents and teachers need specific guidelines for dealing with gifted pupils. The next few sections will deal with this subject.

(1) Guidelines for parents in dealing with gifted children

(a) Examples of parental approaches and methods symptomatic of a disordered educational situation

The parental guidance function in modern society is becoming increasingly complex. It was pointed out in Paragraph 6.3.2(1)(f) that the educational relationship between educator and educand is marked by certain pedagogical characteristics, but the exceptional personalities of gifted pupils make it difficult, even impossible, for many parents to establish such a relationship. The literature lists a number of problems experienced by parents in this connection.

1) Excessive emphasis by parents on the intellectual and other potentialities of gifted children

Parents of gifted children are sometimes so impressed by the intellectual and other potential of their children that they lose perspective on this potential. The children are then provided with so many "enriched" learning experiences that other needs are neglected. Vernon, Adamsom and Vernon (1977: 109-110) point out that such parents often *overestimate* their children's potential and exert pressure on them to achieve more than they are capable of. Schwartz (1981: 34-35) writes that when parents are too preoccupied with the exceptional achievements of their gifted children, the children acquire an unrealistically high opinion of themselves and even become insufferably egoistic. Gifted children appreciate sincere praise, but the type of parent in question is inclined to laud to the skies even the most trifling manifestation of unusual ability. To the child these praises become empty rhetoric. Furthermore, Schwartz believes that a parental overemphasis on the achievement of one child in a family can produce tension between that child and his siblings and peer group. Such a child may attempt to outdo other children at *all costs* and may even make obnoxious comparisons between his own achievements and those of others.

Ross (Colangelo and Zaffrann 1979: 405) points out that all children, including gifted children, need challenges and should be taught to accept *failure* as well as success. When parents manipulate the primary educational situation in such a way that a child is successful in *every* area, they are not in fact helping him to develop his abilities. Greenstadt (Miller and Price 1981: 77) is probably correct in stating that parents sometimes see their children (and perhaps more particularly their gifted children) as extensions of themselves who are destined to actualise their own frustrated and unattainable ideals. This may lead them to exert unnatural and unrealistic pressures on children to produce achievements that embody their (the parents') wishes. The same researcher points out that parents can idealise the potential of their children to a point where they expect them to be successful in *everything* they undertake (Miller and Price 1981: 80).

It should be clear that parents can, through an excess of enthusiasm, lose all perspective concerning the true potential of their children, and this is an obvious obstacle to a healthy educational relationship.

2) Inadequate emphasis by parents on the intellectual and other potentialities of gifted children

Because of their own ineptness at dealing with their gifted children, some parents feel that it is better to do nothing. They take the line that the children's exceptional endowment will enable them to cope without help. This is, of course, a fallacy. One has to agree with Sumption and Luecking (1960: 133) that the affective insecurity of parents often hampers the development of giftedness in their children. An insufficient emphasis on the exceptional intellectual and other potentialities of a gifted child may mean that the child's needs are not met, which naturally impairs the educational relationship. Clearly parents should be helped to find a balance between overemphasising and underemphasising the abilities of their gifted children. Too few opportunities for enriched learning and personal development are as harmful as too many.

3) Unjustified parental exploitation of the intellectual and other potentialities of gifted children

According to Haasbroek and Jooste (1981: 52), some parents regard their gifted children as status symbols. The children's exceptional intellectual and other endowments, their outstanding achievements, have prestige value for the parents. Such parents often exert unrealistic pressure on a child to make him excel, which (according to DeHaan 1963: 103) can cause the child to reject parental values. This can trigger a whole sequence of undesirable reactions, even serious behavioural disorders. Thom and Newell (French 1959: 338) point out that parents sometimes gratify their own vanity by boasting about their children's abilities. Some also subject their children to such pressure, such exorbitant appeals to excel, that the children's development is impaired. This supports the views of Sumption and Luecking (1960: 133) to which reference has already been made. Unjustifiable parental exploitation of the intellectual and other potentialities of gifted children is a serious problem which makes it almost impossible to establish an educational relationship. As such it is one of the main obstacles to the formation of a positive attitude.

4) Parental insecurity in dealing with exceptionally creative gifted children

Parents are often uncertain about the nature of creativity and the creative process and about how creative powers are manifested. The manifestation of creativity often brings gifted pupils into conflict with parents and with the school, peer group and community. Khatena (Gowan, Khatena and Torrance 1981: 241) quotes Torrance as saying that, because of their own need for independence and their non-conformity, exceptionally creative gifted pupils often have grave problems in meeting the demands of conformity. The concomitant increased stress may prevent such pupils from developing their creative powers - causing them, according to Khatena (Gowan, Khatena and Torrance 1981: 242), to become overly dependent and ready to conform, to the detriment of their self-concept. Serious learning and behavioural disorders may also result. Such a situation is fertile ground for negative attitudes which will hamper the educational relationship.

5) Relational problems in the family

Ross (Colangelo and Zaffrann 1979: 405) points out that parents of gifted children frequently have problems with sibling relationships in the family. Sometimes they do not know how to meet the needs of gifted children in such a way that the non-gifted siblings will not feel neglected. All the children in a family, including the non-gifted children, need acceptance and understanding and want to feel that they are making a unique and meaningful contribution to the life of the family. It often happens that one gifted child overshadows all the others. According to Ross, this is a particular problem when the gifted child is younger than the others.

According to Duminy as quoted by Jacobs (Müller 1979: 42), gifted children are extremely sensitive to bad relations between their parents. He adds that such pupils are inclined to become tense and hypersensitive if confronted with social problems at too early an age. Jacobs (Müller 1979: 42) also cites Barber *et al.* as pointing out that feelings of rejection and hostility within the family can impair the social development of gifted children. In homes where there is little or no cultural and educational tradition, such children can easily upset the educational relationship by unruly and undisciplined behaviour. Since parents in such a situation cannot give the required guidance, problem behaviour is very likely.

It should be clear that relational problems in the family can cause negative attitudes and are in fact among the greatest obstacles to an adequate educational relationship.

6) **Unbalanced development of the abilities of gifted children**

According to Ross (Colangelo and Zaffran 1979: 405), an imbalance between the cognitive, affective and social development of gifted children can create major problems for parents. The latter often forget that gifted children are *not necessarily* as advanced in their affective and social development as in cognitive capacity. Laycock (French 1979: 82-83) concurs, remarking that parents tend to overlook that their children - despite their exceptional intellectual and other endowments - are still only children on the way to adulthood.

Parents need to realise that it is not cognitive ability only that needs to be developed: gifted children have much the same educational needs as average children, being advanced only in respect of cognitive capacity. Parents should therefore be willing and able to form a realistic overall evaluation of their gifted children. If they fail to do so the children's development may be one-sided with negative implications for optimal, positive personality growth.

7) **Attitudes that may be present in parents of gifted children**

While many parents of gifted children achieve a positive acceptance of their children's exceptional intellectual and other potentialities, and are challenged by them, Schwartz (1981: 31) has found that some parents experience the responsibility as daunting, threatening or even burdensome. Since parents as primary educators are probably the most important agents in the development of giftedness, such attitudes are worthy of note. According to Thom and Newell (as quoted by French 1959: 338), parents are sometimes sceptical about their children's giftedness, refusing to accept it; this could be ascribed to such negative attitudes and to the fact that parents, according to Kruger (Müller 1979: 60-61), are sometimes so overwhelmed by their children's potentialities that they become insecure, displaying a lack of self-confidence in their dealings with them. Because of their unique personality structure, such children make unusual demands on their parents' knowledge. Because they are able to move at the same level as older children or even adults, they may also expect to take part in adult conversation. Parents may feel inferior because they cannot handle this "odd" behaviour in their children. Kruger writes that parental attempts to guide gifted children to conformity can often become a source of conflict between parent and child. Parents may feel ashamed because the children are not always tidy in their work and personal appearance, are constantly interrupting grown-up conversations or do less well at school than less gifted children. Such a situation can become a crisis, with all the concomitant negative implications for the educational climate and relationship. According to Kruger (Müller 1979: 61), parents then become uncertain about how to relate to their gifted children and frequently display feelings of impatience, irritation, frustration, insecurity and powerlessness. Probably this is why parents may even be prepared to make their gifted children feel inferior or guilty - an obvious obstacle to the development of the self, self-concept and self-actualisation.

Ross (Colangelo and Zaffrann 1979: 406) goes on to point out that parents frequently feel *threatened* by exceptional intellectual and other potentialities in their gifted children because the children *demonstrate* their superiority by finding solutions to problems their parents could not solve. Greenstadt (Miller and Price 1981: 79-80) writes that parents who themselves *have an exaggerated need to* achieve, and who feel overshadowed by their gifted offspring, may develop a sense of hurt pride and consequently react to the children in an aggressive and threatened way. Such parents often act as though they are *competing with their children*. If the parent, giving way to this educationally irresponsible attitude, comes off second best, it starts a vicious cycle in which the child associates achievement with negative affect. Such a child may withdraw from competition and express his abilities in terms of fantasy or in "safe" areas where he will not be exposed to criticism and humiliation.

(b) Purpose of providing parents with guidelines for dealing with gifted children

The purpose of giving parents guidelines for dealing with gifted children is to enable them to approach and handle such children in such a way that an educational climate and relationship will be created which will permit optimal education.

A number of particularised objectives may be distinguished within the framework of the general goal. Guidelines for dealing with gifted children should enable parents to

* establish an educational climate in the primary educational situation which will promote an educational relationship within which the needs of gifted pupils can be met;

* identify, recognise and respect the exceptional intellectual and other potentialities and limitations of their gifted children;

* evaluate their children's abilities realistically;

* find a balance between an exaggerated and an insufficient emphasis on the exceptional abilities of their children;

* understand how important it is that their children should not develop one-sidedly because of an exclusive emphasis on, say, cognitive development;

* support their gifted children in the development of their specific gifts;

* support their children in the development of any creative powers they may have;

* support their children in the positive acceptance of failure and disappointment;

* establish the necessary disciplinary and authority structures within which giftedness can develop optimally and positively;

- handle "awkward" and even eccentric behaviour in their children;
- avoid feeling threatened by their children's exceptional gifts on account of their own ineptness, ignorance, insecurity and prejudice.

(c) Possible parental options for dealing with gifted children

Parents of all children (whether gifted or not) should realise as a matter of urgency that they are obliged to make a constructive, positive and consistent contribution to the education of their children - even, perhaps *particularly*, after the children go to school. Parents remain the primary educators and this responsibility can never be transferred to the school, which in terms of teaching and education is merely an extension of the home.

In order to establish an educational climate and relationship which will make for optimal development of the self, self-concept and self-actualisation, parents need to exercise their guidance function in such a way that

- the children *feel* completely and unconditionally *accepted* by their parents;
- they *experience* their parents' *love*;
- they experience the home environment as *secure*;
- they feel that their characteristics and needs are understood and that their parents evaluate them positively yet realistically;
- they are helped to arrive at a realistic self-evaluation and self-acceptance;
- realistic goals are set for education;
- the educational relationship is one of mutual respect;
- it is recognised that the educational relationship is by implication an *authority relationship*.

These principles apply to all children, and parents need to remember that a gifted child has much the same basic educational needs as any other child (Vernon, Adamson and Vernon 1977: 127-129). Gifted children too are children on their way to adulthood, not miniature adults. Parents of gifted children need to understand this.

1) A proper parental perspective on gifted children

It was pointed out in Paragraph 6.3.2 that parental knowledge of giftedness, gifted pupils and education for gifted pupils is crucially important to the formation of positive attitudes. It may be concluded that parents need to be informed about

- the essence of giftedness;

* education for gifted pupils;

* the characteristics and needs of gifted pupils;

* the human urge to excel;

* the importance of developing the self, self-concept and self-actualisation;

* the importance of establishing an adequate educational climate;

* the nature of an educational relationship that optimises the actualisation of potential.

As in the case of non-gifted siblings, parents should positively recognise, understand, appreciate and maintain a sound perspective with regard to the intellectual and other potentialities of their gifted children. Pasques, Boshoff and Nel (1983: i) remark that the provision of special education for gifted pupils (and this certainly applies to the primary educational situation as well) should be a sincere attempt to offer these pupils an opportunity to become, in terms of their own abilities, that someone whom they are destined to be. Parents need to remember that their gifted children are not status symbols: their gifts are *gifts of grace*. Neither are these children *extensions* of the parents - the unattained ideals of the latter should not be achieved *through* their children. Gifted children were not given their exceptional endowments in order to fulfil the unrealised ambitions of their parents.

The most important point of all is that parents should always see their gifted offspring as children on the way to adulthood, bearing in mind that these children have much the same characteristics and educational needs as any other child. They should never be given the idea that they are exceptional and therefore entitled to special *privileges*.

Parents should know both the potential and the limitations of their gifted children, evaluate these realistically and maintain a sound perspective; should see the development of these children's potential as a *challenge* and give them *opportunities* to develop optimally and positively. Parents should never be so overawed by their children's giftedness that they subject them to *unnatural pressure* to excel. Since gifted children are *children* first and foremost, parents should never overload and overschedule their work programmes to the point where they have no time for relaxation and independent play.

Fine (Barbe and Renzulli 1981: 468-469) points out that in the USA, in the matter of guidance to parents and teachers on dealing with gifted children, there is often a very strong emphasis on the optimal development of a child's potential. This responsibility can weigh very heavily on parental shoulders. As Fine puts it:

> Not every gifted child, whatever his potential, *has* to grow up to be a "world-beater" and a moulder of the destiny of mankind. From this writer's point of view it will be sufficient if a

> gifted child grows up feeling good about himself, is productive and competent in his work and personal relationships, and able to enjoy a full, rich life.

While there may be differences of opinion about the full implications of this statement, it is true enough that parents can and do lose their perspective about the intellectual and other potentialities of their gifted children.

It can be concluded that parents need to see and evaluate the needs and characteristics of gifted children realistically, have realistic expectations and give their gifted children the opportunity to live up to these expectations.

2) **Possible parental options for dealing with exceptionally creative gifted children**

It was stated in Paragraph 6.3.3(1)(a)4) that parents frequently do not know how to deal with gifted children who have exceptional creative potential. As a result, negative attitudes may be formed and the educational situation disturbed. The importance of developing the gifted child's creativity is generally seen as a top priority (see Chapter 3), and the role of parents here as primary educators is decisive. It is vital, therefore, that parents should accept the creative potential of their gifted children, not feel embarrassed or threatened by it and that they should give the children the opportunity to develop their gifts. Davis and Rimm (Colangelo and Zaffrann 1979: 227) maintain that creativity can be expressed either constructively or destructively, implying that parents have a very specific guidance function in this respect.

The following ways of dealing with gifted children with exceptional creative powers are proposed by a number of authors including Olivier (Müller 1979: 69-71), Ross (Colangelo and Zaffrann 1979: 404-405), Willings (1980: 111-114), Hildreth (Miller and Prize 1981: 96-97), Khatena (Gowan, Khatena and Torrance 1981: 243-245) and Thorne (Gowan, Khatena and Torrance 1981: 236-239):

* Gifted children with high creative potential generally show positive personal characteristics. Research has revealed, however, that such children can also be unco-operative, demanding, egocentric, presumptuous, discourteous, insensitive to social conventions, affectively labile, stubborn, bad tempered, withdrawn and hostile to authority. Parents need to note that such behaviour may indicate that a child is original and independent and has a questioning mind - traits that are closely related to creativity.

* While children of this type can place considerable strain on the authority structures of a home, parents should remember that such structures should never be autocratic. Researchers have emphasised that authoritarian structures impair the development of creative powers, and they advocate a more democratic approach in which the child takes part in the decision-making process. Such a situation can establish mutual trust and encourage the development of the self, positive self-concept and self-actualisation.

On the other hand, children should not be permitted to lay down the standards for behaviour.

* Guidance to gifted children of this type should enable them to develop their own value system and approach to life and to express these consistently. This is a very special function, since highly creative gifted children often have unusual values and notions. Parents should tell these children about the importance of conformity but should realise that a tendency to non-conformity is often the mark of an exceptionally creative person. If such a child can develop his own philosophy of life, he will be prepared to face up to problems.

* Parents of highly creative gifted children should be aware of the nature of creativity. According to researchers such as Wallas (quoted by Gallagher 1975: 249-250) and Kirschenbaum (1979: 35), creativity manifests itself as a process. According to Haasbroek and Jooste (1981: 39) it will only be identifiable once it is realised.

The process consists of a number of elements with which parents ought to be familiar:

Preparation:	A problem is examined from a number of angles.
Incubation:	An unconscious mental process follows which correlates fresh data with existing information.
Illumination:	The person suddenly perceives the solution to the problem.
Verification:	The perceived solution is tested in terms of realities.

Usually the individual is very withdrawn during certain stages of the process (especially incubation), and the moment of creation can be a sensitive one. The whole situation is likely to be incomprehensible to parents if they do not understand the creative process. Parents need to realise that the unusual behaviour of such children, their tendency to withdraw and fantasise, is often a manifestation of creative thinking.

* The characteristics of highly gifted creative children make it clear that they often have inquisitive, non-conformist, questioning, critical and sensitive minds. Their courage and boldness often expose them to criticism, hence they frequently stand alone and tend to be introverted. As a result, they often have a greater need of security, acceptance, understanding and love than the average child. Their unusual behaviour brings them into conflict with the outside world, but parents should realise that they cannot always be protected but should rather be enabled to handle conflict (and the stress it generates) in accordance with their own convictions. *Overprotectiveness* discourages the development of venturesomeness and the manifestation of creativity. It is therefore important for parents to note the need for independence, to encourage it and give the children the opportunity to develop their independence and individuality.

* Parents of exceptionally creative gifted children should regard the development of such gifts as a top priority. The following measures could be taken:

  - Parents should use their own creative powers to generate ideas which the children can amplify.

  - Both parents and children should appreciate the importance of individual ideas and opinions.

  - Children should be encouraged to experiment with various ideas, to improvise and fantasise.

  - Parents should encourage children to ask questions by asking stimulating questions themselves. Explicit answers should be given and the children taught to find answers from other sources as well.

  - Children should be helped to realise that familiar objects and subjects can be approached in unconventional ways, giving rise to new and unusual associations.

  - Children should also be led to realise that there may be a whole range of solutions to the same problem.

  - Factors that restrict the manifestation of creativity should be eliminated. Parents should give their children opportunities for self-initiated exploration (within limits, obviously), observing, questioning, classifying, recording, inferring, communicating, fantasising and analogical thinking.

  - The learning of language skills should receive top priority. Parents can help by providing suitable reading matter, particularly within the child's field of interest. The possibility of learning other languages should also be borne in mind.

  - Parents need to realise the importance of shared family activities and hobbies in the manifestation of creativity. If children are given a reasonable measure of freedom to explore, experiment, manipulate and fantasise, a wide range of activities will open up.

  - Parents should remember that play is important to a child: it stimulates thought and provides an opportunity for simulation and for experimenting with ideas.

3) Provision by parents of adequate learning opportunities and experiences for gifted children

Parents often have the misconception that it is exclusively the school's business to provide learning opportunities and experiences. Karnes and Karnes (1982: 238) make it clear that the home is the child's first learning environment. Sanborn (Colangelo and Zaffrann 1979: 396) concurs: "For better or for worse, the capacities and proclivities of the child reflect the impact of the parents." There is thus no doubt about parental responsibility for the development of giftedness and for the provision of adequate learning opportunities and experiences. As Rice (1979: 101) remarks, the home environment should form a cultural microcosm in which the gifted child is brought into contact with as many culturally enriching experiences as possible. According to such researchers as Rice (1970: 101-102), Vernon, Adamson and Vernon (1977: 118-129), Davidson (Miller and Price 1981: 74-75), Fine (Barbe and Renzulli 1981: 469-472), Hirst (Miller and Price 1981: 76), Schwartz (1981: 31), Karnes and Karnes (1982: 238) and Clark (1983: 386-391), parents should bear in mind the following points:

* They need to remember that gifted children will probably display an appetite for knowledge at an early age. This need can be met in a variety of ways, for example by selecting and providing suitable reading matter, radio and television programmes, creating opportunities for attending educational gatherings and visiting museums and art galleries, and by teaching them to use libraries. Parents should also give positive support to learning programmes for gifted children.

* It is vitally important for parents to assist the development of their gifted children's linguistic abilities. In this regard the child's interest should be aroused by providing suitable reading matter at an early age.

* Gifted pupils generally have exceptional problem-solving skills. Parents can devise problem situations to which the children have to find solutions. Such situations stimulate the children's powers of observation and their ability to analyse and synthesise and to perceive cause-effect relationships.

* In the above situations the child's interests have to be taken into account. Parents have a responsibility in channelling these interests in a meaningful way. This will require knowledge of the characteristics and needs of gifted pupils, of the choices exercised at school and of the demands of the occupational world.

* Parents also need to understand that gifted children are ready to explore at a very early age. They generally ply their parents with questions, which should never be discouraged: to dampen the child's urge to explore may cause him to lose interest altogether. Parents should bear with their children's curiosity and appetite for knowledge. Although parents cannot be expected to know the answers to all the questions children ask, they should help their children to learn techniques and methods of finding answers.

* It is important, furthermore, to praise the achievements of gifted children - but such praise should always be genuine. Gifted children, even more than others, readily detect a false or rhetorical note.

* Another point to note is that gifted children need time on their own. Parents should ensure that they are not overloaded and overscheduled to a point where they have no free time.

4) Importance of adequate family relationships

Jacobs (Müller 1979: 41-43) refers to the importance of adequate family relationships in the development of gifted pupils - the fact that the home environment provides the first opportunity for social contact. Jacobs concludes that family relationships are decisive in the social adjustment of such children. Schwartz (1981: 34-35) states that parents should in the first place establish a warm, affectionate relationship with their children which will afford a sense of security that will foster the development of giftedness. It will also constitute a relationship of trust that will give the child confidence to explore and experiment with new skills without any fear of rejection or a loss of love. Both Jacobs (Müller 1979: 42) and Schwartz (1981: 35) point out the importance of parental interest in the gifted child *as a person*. Of course all children reveal this need, but gifted children are *more sensitive* than others to the feelings of their parents. Gifted children also have a need for total parental acceptance. Jacobs (Müller 1979: 42) confirms that early rejection and hostility in the family may result in defective social adjustment.

Jacobs (Müller 1979: 43) goes on to say that if parents treat their gifted children as "different" and make them the centre of interest, it may arouse the envy of siblings and impair family relationships. This is a very serious matter if one considers that contact with brothers and sisters is the gifted child's first contact with other children. One has to agree with Schwartz (1981: 35) that gifted children should not set the pace or be the centre of attention at home. Parents should find time to meet the needs of *all* their children. This will promote harmonious relationships and prevent a loss of perspective about the exceptional intellectual and other endowments of gifted children. Parents should remember, therefore, that each of their children has unique characteristics and needs, potentialities and limitations. Unjustified attention to one child at the expense of others, or the domination of non-gifted children by a gifted sibling, is one of the gravest injustices that can occur in a family. Parents should take care to stress the potential of each child, including the non-gifted ones, find time to develop this potential and accept the limitations of each child alike. Conceited attitudes and unwholesome sibling rivalry can be obviated by teaching a gifted child to evaluate *his shortcomings realistically*. By assigning gifted children the same domestic chores as the others, an unrealistic "star" status is avoided.

5) The importance of a normative parental example to gifted children

Schwartz (1981: 34) points out that parents are the primary identification figures for their children. Naturally they should be *suitable* identification figures, especially for gifted children. The psychological make-up of such children makes them better able than other children to assess the suitability of identification figures. Their sense of justice and of moral and ethical values and responsibility is often highly developed. They are unusually sensitive to injustice, unfairness and hypocrisy, and it distresses them. The implications for a normative parental example are clear.

Since the parents' normative example provides a model of social attitudes, affective normality, purposefulness, self-actualisation, problem solving and the correct approach to problems, it is crucial that they exercise a very specific guidance function in developing the child's system of values and eventually his own *philosophy of life*. Rice (1970: 100-101) points out that parents should *exemplify the values* they expect their children to incorporate in their own value systems. In acquiring and developing a personal system of values, the gifted child has to exercise choice, and parents should encourage their children to develop their own points of view. They should therefore enter into dialogue with their children (even on contentious matters) and any suggestion of evasiveness, rationalisation and false values should be avoided. Children should also, in the development of their own values and philosophies, become acquainted with the values and philosophies of others (including those of people outside the family) and be helped to develope their own attitudes in this respect. As the parent-child dialogue proceeds over the years, and as parents become identification figures for their gifted children by setting an appropriate normative example, these children will develop a personal value system and approach to life which will constitute an appropriate guideline for the future.

6) **The importance of proper, effective authority structures in the primary education situation**

It should be clear from Paragraph 6.3.2(1)(f) that proper authority structures are an essential element of the educational relationship.

Stensrud and Stensrud (1981: 161-162) consider that educators, in establishing authority structures, should pay heed to the importance of developing *self-discipline* in a child. They point out that the development of self-discipline is inhibited by *authoritarian structures* which make children *dependent, aggressive and withdrawn*. They conclude that authoritarian structures are based on *distrust*, an overcompetitive approach to goals, a confidence in simplistic techniques of modifying behaviour by manipulation, and inflexible and unadaptable practices (Stensrud and Stensrud 1981: 164). Given the goal of education for gifted children, it is clear that authoritarian structures with an unwholesome emphasis on external controls will be self-defeating.

Stensrud and Stensrud (1981: 165-166) go on to say that authority structures designed to promote self-discipline are different in *intention* from authoritarian structures. The former are based on the realisation that the development of self-discipline and personal responsibility is a basic educational goal. Self-discipline does not come about automatically: children have to be helped to develop it and the educational relationship should make provision for it. Authoritarian structures give children no say in their own education and often result in rebelliousness and withdrawal. By giving children a say in the situations and decisions that affect their lives, co-operation and self-discipline are promoted. Authority structures of this kind will have co-operative goal structures that foster the awareness that self-discipline calls for empathy, resourcefulness and receptiveness to fresh possibilities. Co-operative goal structures promote power sharing, the use of skills for the fulfilment of personal and group goals, and a willingness to enter into relationships. This does not imply a lack of structure: educators remain responsible for the development of an effective authority structure. Structures designed to encourage self-discipline will give children certain basic guidelines for appropriate behaviour - guidelines that will be neither too broad nor too narrow and will be applicable to all parties without permitting double standards. They will also be explicit about the type of behaviour that is considered appropriate, yet flexible enough to permit modified behaviour. Such authority structures will encourage the development of the child's own individuality and sense of responsibility. Whereas authoritarian structures are designed to manipulate behaviour in an authoritarian manner, structures that encourage self-discipline will help children to exercise control over their own behaviour. Since children are not naturally inclined to exercise internal control (self-control), parents have a vital part to play in this connection.

On the other hand, parents should never overreact to authoritarianism by lapsing into liberal, permissive practices. Researchers consider these to be no less harmful to the development of self-discipline and self-control. Both DeJames (1981: 35) and Gowan (French 1959: 400) substantially support this view, holding that parents should take a more democratic line about the education of their children. Parents who are either autocratic or overprotective or permissive, impair their children's development.

Landman (1977: 256) concurs: an authoritarian educational relationship results in oppression and permanent dependence on authority, while an anti-authoritarian attitude causes all authority to be rejected and relinquished, leading to a rejection of essential learning assistance. Indeed, Landman believes that in addition to listening to, opting for and acting according to approved standards, the essence of obedience requires co-operative listening to, opting for and acting according to what is approved. The educand's experience should be that he is not only with but in sympathy with the educator. The relationship should become an *encounter*. In the pedagogic situation the proper responses and actions which a child should eventually produce independently should be rehearsed with the educator (pp. 260-263).

7) Importance of effective communication between parents and gifted children

Many of the problems parents experience with gifted children can be traced to defective communication within the family. Parents should be aware of the importance of family communication and should never stop trying to improve such communication. Fine (Barbe and Renzulli 1981: 471-472) sees effective communication as the basis of adequate family relationships. Kruger (Müller 1979: 60) concurs, concluding that a warm, empathic family relationship characterised by effective communication gives the gifted child a chance of actualising his full potential. Olivier (Müller 1979: 71) agrees and points to the importance of effective communication in the development of creativity. According to him, far too many creative ideas and solutions are lost because of defective communication between parents and gifted children.

According to Kruger (Müller 1979: 60-64), Olivier (Müller 1979: 71), DeJames (1981: 34) and Fine (Barbe and Renzulli 1981: 471-472), parent-child relations can be improved in the following ways:

- Parents and children should show understanding for one another's needs.
- They should have a relationship of trust.
- Parents and children should be prepared to *listen* to each other with real understanding for one another's thoughts and feelings.
- Both parties should try to communicate honestly.
- Feelings of *tension, impatience, frustration, insecurity and powerlessness* should be avoided as far as possible as obstacles to genuine communication.
- Both parents and children should be prepared to consider *differing* or even *opposing* points of view on any matter.
- Different views should be *respected*.
- There should be clarity as to which matters are *negotiable* and which are non-negotiable.
- Viewpoints should be stated *clearly and explicitly*.

Attention to these points can result in better family communication and relationships, which may in turn improve communication and effectiveness in school and in society.

8) Importance of total personality development

Parents are sometimes so preoccupied with developing the cognitive abilities of their gifted children that they neglect the child's total personality development. It should be realised that not just the child's cognitive ability but also the affective, social and conative aspects of his personality need to be developed.

Schwartz (1981: 32) draws attention to the importance of sport in developing the potentialities of gifted children. Parents ought to realise that physical activity not only stimulates kinesthetic skills and abilities but provides an "incubation period" during which gifted children can develop creative ideas and problem-solving strategies. Sport also brings the gifted child into contact with his peer group and with non-gifted children. Schwartz goes on to emphasise that gifted children (during the preprimary and primary school phases especially) ought to be involved in play. Play often provides an opportunity to rehearse various social roles, and as such it is an important factor in the child's preparation for adult life. Play furthermore provides an opportunity for rehearsing effective communication, acquiring self-confidence in interpersonal relations, testing ideas and acquiring knowledge about the adult world in a fairly safe and simple way. Through play the gifted child meets his peer group and gets to know, accept, evaluate and handle his own potential and limitations and those of others.

Parents should also guide their gifted children to a realisation that their abilities ought to be employed to the advantage of the peer group, the school and society in general. Laycock (French 1959: 86) concurs, adding that gifted children should be helped to identify and appreciate the positive qualities and respect the dignity of others. Parents have yet another important guidance function: they should enable their children to win the acceptance of others *without relinquishing their own individuality*. Conformity should not be overaccentuated, since this may prompt the gifted child to *underemphasise* his own exceptional intellectual and other potentialities in order to gain acceptance by the peer group and others.

A number of researchers such as Vernon, Adamson and Vernon (1977: 128-129), Fine (Barbe and Renzulli 1981: 469-470) and Schwartz (1981: 34) point out that, as time goes by, the gifted child displays an increasing need for independence and autonomy, and that parents should help him in this regard. Parents should therefore give their children opportunities to express their individuality and, as they mature, increasingly treat them as autonomous persons with their own ideas and convictions. It is crucial, however, not to try and speed up this process in unnatural and unrealistic ways.

Along the same lines, Schwartz (1981: 32-33) points out that parents should help their gifted children to take independent decisions at an early age. This can be done by initially confronting younger children with simple, safe and easy choices. The children should also be encouraged to explore, to satisfy their curiosity and initiate their own activities. Parents need to realise that the development of autonomy, individuality and initiative in early childhood provides the basis for the decision-making skills that will be required in later life of gifted children in particular. Parents should help their children to manifest their ability, individuality and purposefulness discreetly. The parent has the highly specific function of teaching the child to discern the degree of non-conformity that will be tolerated by teachers, peer group and society. Children also have to be supported in finding constructive ways of manifesting their interests.

As they grow older, children should be encouraged to have high aspirations and should be supported in actualising them. As a part of this endeavour, parents should not only *state* the importance of scholastic excellence, perseverance, conscientiousness and purposefulness - they should set an example in this regard.

In the provision of special education for gifted children, the emphasis often falls on the development of cognitive ability. It is important for parents to be aware of this tendency and to compensate for it by developing the affective, social and conative qualities of their children in the primary eduational situation.

9) Résumé

Indications have been given of possible ways in which parents as primary educators can deal with gifted children. By way of summary the following points are listed on the basis of the views of such authors as Gowan and Demos (1964: 348-350), Rice (1970: 100-102), Gowan and Torrance (1977: 180-187), Ross (Colangelo and Zaffrann 1979: 402-407), Kaufmann (Miller and Price 1981: 86) and Clark (1983: 389-390):

* A gifted child, like any other, is a child on the way to adulthood with a need of understanding, acceptance, love, trust, security and authority. Parents need to understand this.

* Parents should ensure that the primary educational situation enables the gifted child to achieve optimal, positive development of the self, form a positive self-concept and attain self-actualisation.

* The primary educational situation should present such children with an opportunity to achieve autonomy, individuality, self-reliance and responsibility.

* The potential and limitations of gifted children should be realistically evaluated and accepted by parents in the primary educational situation. Parents should accept the responsibility of helping to develop the exceptional intellectual and other potentialities of such children, and realistic goals should be set for this process.

* Parents should note and accept individual differences between children.

* The home environment should be a refuge for the child: because they are different, gifted children are sometimes rejected by their peer group, teachers and society.

* Parents may also have to deal with their *own* prejudices in respect of certain manifestations of giftedness, such as originality, unusual and unconventional ways of questioning, fantasising and unusual thought processes.

* It is vitally important for parents to realise that the responsibility for the optimal development of a gifted child's exceptional intellectual and other potentialities rests *primarily* on the shoulders of the *parents* and cannot be transferred completely to the school.

* Parents need to provide adequate stimulation for a gifted child's imagination, and such a child should be permitted to think and daydream.

* Early manifestations of creativity should be encouraged.

* Parents should assist the constructive channelling of creativity, since this quality can be expressed both constructively and destructively.

* In times of disappointment and self-doubt, a gifted child should be given special support.

* A gifted child's urge to achieve should be *encouraged*: parents should provide the *inspiration* that promotes achievement and should make the child aware of the *intrinsic* reward of self-actualisation.

* Parents should provide their gifted children with adequate learning opportunities and experiences by

- confronting them at an early age with problems that demand the actualisation of their abilities;

- stimulating the early development of verbal powers of expression;

- providing them with suitable reading matter from which they can learn;

- arranging educational outings such as visits to art galleries, museums and educational institutions;

- giving meaningful answers to the numerous questions asked by such children. Answers should be given in a way that not only supplies information but encourages and teaches the child to seek the answers for himself;

- providing meaningful channels for the expression of the broader interests of their gifted children;

- being prepared to accept and evaluate a variety of views on any issue;

- helping to temper their gifted children's perfectionism;

- helping their gifted children to realise that exceptional intellectual ability implies more than the mere memorisation and reproduction of subject matter;

- supporting and propagating the provision of special education for their gifted children.

* As far as possible, parents should ensure that the home environment is free from unnatural tensions and that family relationships are sound.

* A good normative example is of cardinal importance: parents should practise what they preach. Consequently they should not disagree fundamentally on vital issues.

* Parents should be suitable identification figures for their gifted children.

* They should consciously keep communication channels open in the home. Each child in the family should have his own regular, special time during which he has his parents' undivided attention. Parents should give this matter proper consideration before they run into problems.

- The authority structure in the primary educational situation should be such that the actualisation of ability is optimised. An autocratic structure will severely hamper the actualisation of giftedness. Consequently the home authority structure should be democratic and aimed at promoting self-discipline and the exercise of inner control (self-control).
- Parental guidance should prompt a gifted child to develop his own system of values and philosophy of life.
- Gifted children should be given both the opportunity and the guidance to make their own decisions and they should have a say in matters that concern them and on which they are qualified to make decisions.
- Gifted children should be helped to accept and cope with the fact that they are *unlike other people*.
- Gifted children should be helped to note, accept and appreciate the individual differences between people and to appreciate their own individuality.
- Gifted children should be helped to accept and assimilate failure and disappointment.
- Gifted children are often unusually aware of, and anxious about adult problems such as political and moral issues. Parental guidance in this area is vital.
- Parents should ensure that their gifted children form the right relationships with siblings, the peer group, teachers and other adults.
- The daily tasks of a gifted child should not be structured to a point where the child has no free time.
- Gifted children are often unsure why and to what extent they are expected to conform and need parental guidance in this area. They need to realise that non-conformist behaviour can be either constructive or destructive.
- Parental guidance should encourage gifted children to be venturesome in appropriate ways.

(2) Guidelines for teachers in dealing with gifted children

(a) Examples of problems that can disrupt the educational relationship

It should by now be evident (see Par. 6.3.2(1)(f) that the educational relationship ought to manifest certain essential pedagogical qualities. Tension and conflict between teachers and pupils can disrupt the relationship and generate negative attitudes. Given the point made by Hildreth (1966: 534) that a suitable educational relationship is the key to effective teaching and education, the disruption of this relationship has strongly negative implications for the optimal, positive development of giftedness. Nelson and Cleland

(Barbe and Renzulli 1975: 439) agree, and state further that a teacher's attitude is more important than the techniques and methods employed. Indeed, it is the *teacher* who establishes a learning environment that

- develops or destroys self-confidence,
- stimulates or inhibits interests,
- stimulates or neglects ability,
- develops creative powers or allows them to go to waste,
- stimulates or discourages critical thinking,
- encourages or discourages achievement.

For all these reasons, it is vital to take note of problems that can disrupt the educational relationship.

1) Manifestation of creative powers

Goodale (Barbe and Renzulli 1981: 377) points out that many teachers probably regard the quiet, obedient, conforming, disciplined and well-mannered gifted pupil as the ideal - probably because such children do well, are not critical or sceptical, do not show any tendency to disrupt the classroom situation, accept teacher authority unquestioningly and generally act according to the teacher's expectations. LeVine and Evans (1983: 29) note that teachers, for various reasons, tend to be too rigid and inflexible about behavioural norms in the classroom situation. Children who deviate from these norms are usually branded "problem children", and gifted children with exceptional creative powers are often placed in this category. Khatena (Gowan, Khatena and Torrance 1981: 241) points out that the exceptional creativity of some children may incline them to autonomous action, independence and non-conformity. In the traditional teaching-learning situation, such a state of affairs produces confrontation, tension and conflict, since such children are inclined to be restless, ask endless questions, express opinions (often uninvited and inappropriate) and generally hamper the efficiency of the teaching-learning situation. Quite often they question teachers' methods and efficiency - a type of conduct to which insecure and dogmatic, authoritarian teachers in particular can respond very negatively. Because these children are so inquisitive and keen to learn, they are often found doing apparently irrelevant things in class or exceeding the terms of assignments. Because they tend to be non-conformists, their behaviour can be outrageous, making them unacceptable to teachers and sometimes to the peer group. Gallagher (as quoted by LeVine and Evans 1983: 29) agrees that this tendency towards independence and non-conformity can make such children very difficult to manage in a group context. Their behaviour is often extremely irritating and can completely disrupt the teaching-learning situation. Taylor and Van der Westhuizen (1983: 18) point out that a gifted child sometimes has an odd, subtle sense of humour that can be understood only after careful reflection, or once the teacher realises and responds to the fact that the child is making unusual associations. Clearly this can lead to misunderstandings, and such pupils can be branded "different" in a negative sense. Not surprisingly they are sometimes seen as "troublemakers", a state of affairs that can cause considerable conflict and tension between teachers and pupils.

Taylor and Van der Westhuizen (1983: 18) observe that gifted pupils may produce apparently wrong solutions to problems. When their answers are explained, they often prove to be valid if approached from a particular angle. Teachers, however, are usually under such pressure that the pupil is not given an opportunity to explain how he arrived at his answer, which is therefore arbitrarily rejected as wrong. This may cause the pupil to start doubting his own ability and accepting the teacher's answers and pronouncements uncritically. LeVine and Evans (1983: 29) point out that gifted pupils with unusual creative abilities can also develop patchily and therefore do not function effectively. If they are moreover exposed to subject matter that they find boring, repetitive and devoid of challenge, some basic skills may remain undeveloped, thus hampering the manifestation of creativity even further.

Willings (1980: 96) points out that gifted pupils can respond in a variety of ways to the negative attitudes that may be elicited by the manifestation of their creative powers. For instance, some pupils display socially unacceptable behaviour. They become aggressive, overcompetitive and eager to shock. Their negative attitudes, cynicism and sharp (even destructive) criticism make them completely unacceptable. Another type of gifted pupil withdraws from groups and group activities and prefers to work alone. Often the creativity of gifted children is channelled into directions acceptable to *themselves*. Although they avoid social interaction, finding it painful, they nonetheless need it badly. A third type attempts to be acceptable to the group. Such children constantly seek group affirmation of their worth and are hurt when it is not forth-coming. Criticism is experienced as extremely painful, and they tend to seek acceptance from everyone they meet. This makes it impossible for them to submit their creative efforts to the necessary discussion and evaluation. Bearing in mind Torrance's view (quoted by Khatena in Gowan, Khatena and Torrance 1981: 242) that attempts to restrict the manifestation of creative powers can cause grave and deep-seated psychological problems, it is obviously essential to take seriously the problems of exceptionally creative gifted pupils in the teaching-learning situation.

2) Distinctive learning attitudes in gifted pupils

Malan (1979: 176-177) makes the point that gifted pupils, although capable of exceptional achievement, do not have supernatural powers and gifts that make teaching or education unnecessary. By the time they go to school they are quite often fairly proficient in certain basic skills such as reading, writing and arithmetic. This constitutes a novel challenge to the teacher. On the other hand, some gifted pupils ***will not master these basic skills without the help of a teacher***. Malan points out the error in assuming that ***all*** gifted pupils will take part enthusiastically in teaching-learning events. That is why it is so vital to identify such pupils. If those who are not enthusiastic learners are overlooked in the classroom situation, they may become apathetic and irritable and their attention may wander. This can trigger a chain reaction leading to learning problems.

Sumption and Luecking (1960: 111-113) and Southworth (1979: 187) point out that because the pace at school is generally geared to the capacity of the so-called average pupil, gifted pupils may become dissatisfied with the progress they are making. They tend to reject dull classroom drill and are frustrated by what they experience as meaningless repetition, lessons and homework. They also reject the need to conform to classroom activities. As a result they either lose interest in or else rebel against such activities which they consider unimportant. Such pupils may withdraw from the classroom situation and decline to take part in the work. To them the decision is justified, since they can see no advantage in repeating work they already know. They may also behave in unacceptable ways, such as deliberately giving wrong answers to questions and thereby misleading other pupils and alienating teachers. Sometimes they take "unconventional" attitudes on contentious issues on purpose simply to be "difficult". This negative approach often leads them to act defiantly and to try and prove the justness of their "cause" despite all indications to the contrary. The implications of such conduct for positive relationships need no elaboration.

Taylor and Van der Westhuizen (1983: 18-19) maintain that gifted children often experience time and space differently from other people. It is generally assumed that because of their exceptional endowments they will complete a task more rapidly than the average pupil. According to these researchers, however, gifted pupils may take much longer to complete an assignment because their observations and associations are more advanced and extensive and they consequently have more subject matter to process. They also tend to be perfectionists. For these reasons, they need considerable time to collect, process and reflect on data and to submit a structured presentation. A relatively simple task can thus become a major task to the gifted pupil, one that cannot be completed within the allotted time. Often the teacher does not understand the unique method of working of a gifted pupil. When such a child is forced to follow a stereotyped pattern, inner tension may be generated because he is not permitted to develop a system that is satisfactory to himself.

3) Teacher attitudes and prejudices in respect of giftedness, gifted pupils and education for gifted pupils

According to Hildreth (1966: 534-536), teachers who do not understand the needs of their pupils will be antagonistic to pupils who come forward with original ideas and unconventional observations. As already indicated, teachers tend to approve conformist behaviour while alertness, curiosity and a critical approach are seen as aggressive or rebellious. Witty children with a lively sense of humour are often accused of disrespect and insolence, and the many questions they ask in class can draw a mocking, sarcastic response from teachers and the peer group. Unexpected witticisms from gifted pupils may catch a teacher unawares and embarrass him. Indeed, since these pupils may be better informed than their teachers in some areas, they may ask questions that the teacher cannot answer or they may question the validity of the teacher's knowledge. Consequently teachers may experience the presence of gifted pupils in their classes as a threat and may, according to Thomas and Crescimbeni (1966: 82), feel that such pupils are competing with them in respect of certain knowledge or skills.

Researchers such as Sister Josephina, Wiener and Rothney, and Sanborn (quoted by Gallagher 1975: 314-315) and Lyon (Gibson and Chennels 1976: 23-24) point out that, not surprisingly, teachers are often hostile to gifted pupils. Such hostility may be manifested by giving such pupils extra (and sometimes irrelevant) work (the so-called "That will show Mr Smartypants" syndrome) instead of the specially devised assignments that would meet their needs. It is obvious that such an approach is educationally unsound.

4) Unusual responses by gifted pupils in the area of perseverance

Taylor and Van der Westhuizen (1983: 20-21) point out that teachers generally try to motivate pupils to complete an assignment in order to achieve a certain goal. When this has been achieved, a further assignment is embarked on. Often the gifted pupil is not satisfied with this state of affairs and wants to take a closer look at the first assignment or problem. In such a case the teacher will not have to motivate but rather to demotivate or deactivate. Taylor and Van der Westhuizen remark that as soon as gifted pupils accept responsibility for their own progress, they reject attempts to restrict the depth and scope of their exertions, and this in itself may create problems for the teacher. Because teachers often try to make a class function as a unit, gifted pupils may be forced to drop a subject that interests them and turn to another.

Taylor and Van der Westhuizen (1983: 20) go on to point out that in class discussions, too, the gifted pupil may be persistent about getting to the root of a problem and that this can cause problems for the teacher. Contentious, probing questions, unconventional answers and probing analytical discussions are generally beyond the understanding of the average pupil and can embarrass the teacher, particularly if he himself is not really abreast of the discussion. This type of behaviour in gifted pupils may cause a teacher to feel that his expertise or self-confidence is being undermined. It is ironical that a trait such as perseverance, which all educators are required to develop in pupils, should in the case of gifted pupils produce problems in the teaching-learning situation. The expert handling of such situations should be a top priority with teachers.

Taylor and Van der Westhuizen (1983: 19-20) quote Tuttle *et al.* who make the important point that gifted pupils are able not only to observe their environment comprehensively and searchingly, but also to construe their observations and experience in a variety of ways. Because the written medium is customary in the traditional school set-up, the gifted pupil who can communicate in unusual ways through other media is penalised.

5) Problems experienced by gifted pupils in their educational and vocational choices

According to Taylor and Van der Westhuizen (1983: 19), average pupils do not encounter the same problems as gifted pupils in making educational and occupational choices - probably because their lesser potentialities restrict their choices. Because of his exceptional intellectual and other potentialities, the gifted pupil is faced with a multiplicity of educational and occupational choices. These choices pose a considerable problem for the teacher, especially the guidance teacher. Taylor and Van der Westhuizen point out that the gifted pupil's potential can result in considerable inner tension in the teaching-learning situation: constant decisions as to the time to be devoted to a specific subject, choices with regard to assignments, subjects projects and extracurricular activities. These choices, too, can generate problems and call for expert guidance.

6) Purpose of providing teachers with guidelines for dealing with gifted pupils

As in the case of parents, the purpose of giving teachers guidelines for dealing with gifted children is to indicate how such children can be approached and handled in a way that will create an educational climate and relationship that will permit optimal education.

A number of particularised objectives can be distinguished within the framework of the general goal. Guidelines for dealing with gifted children should enable teachers to

- develop a sympathetic attitude to the needs of such pupils;
- identify, recognise, accept and respect their exceptional intellectual and other potentialities;
- establish appropriate authority structures that will foster giftedness;
- support gifted pupils so that they can manifest their specific gifts, and especially any exceptional creative gifts they may possess;
- establish a secure teaching-learning situation that will foster giftedness and adventurousness;
- accommodate the gifted pupil's unconventional attitude to the learning situation;
- accommodate the gifted pupils' unusual disposition as regards perseverance;
- support gifted pupils in respect of the unique problems they experience in making educational and occupational decisions;
- handle the frequently unusual, non-conformist, even problem behaviour of gifted pupils;
- avoid feeling threatened, on account of their own shortcomings, ignorance, prejudice or insecurity, by the exceptional intellectual and other potentialities of gifted pupils.

(b) Possible options for teachers in dealing with gifted pupils

1) Indispensability of an emancipatory educational attitude

It should be clear by now that researchers reject an authoritarian style of education for gifted pupils. According to Landman (1977: 241-244), authoritarian attitudes generate a hostile tension that is frequently expressed in the form of aggression towards pupils. It is obviously not an educational style that could be expected to meet the gifted pupil's need of individualisation, autonomy, self-reliance and self-actualisation: on the contrary, it hampers original, creative and critical thinking, and the questioning attitude of these pupils and their shrewdness in assessing situations - especially authority figures - can produce massive conflicts that may generate negative responses and have disastrous consequences for their education.

Possibly because of the negative effects of an authoritarian style, some educationists prefer a more liberal anti-authoritarian approach. According to Landman (1977: 244-249), such a style does not promote maturity either, since it

* is one-sidedly pedocentric;
* overemphasises the "pleasure" principle;
* produces an educational style that is not sufficiently future oriented;
* overemphasises the avoidance of anxiety and tension;
* produces an unrealistic emphasis on the pupil's capacity for spontaneous self-regulation;
* does not sufficiently emphasise the culture dependence of human beings;
* overestimates the natural goodness and innocence of human beings;
* takes too little account of aggressiveness;
* overemphasises voluntary participation by pupils in learning events.

It is clear from the literature that the manifestation of giftedness should also be seen as an outcome of learning. Landman points out that the manifestation of potential demands effort and perseverance, which are not always associated with natural inclination. Landman perceives a real danger in liberal education in that a good deal of intellectual work in the real world has to be done without wholehearted enjoyment. Denigration of the intellect in favour of a boundless confidence in feelings can impair the child's humanity.

Clearly these are valid objections that should be borne in mind in the educational situation since they have real implications for the development of giftedness. Gifted pupils have needs in the area of self-development, the formation of a positive self-concept and self-actualisation that cannot really be met by either of the above styles of education.

a) The emancipatory approach to education

Landman (1977: 256) defines this educational style as a non-authoritarian approach that emphasises the need for a pedagogically valid measure of authority and an authority-linked life-style directed at the proper development of the learning child - hence at his gradual emancipation. According to Landman (Landman, Roos and Mentz 1979: 58-80), such a style can be described in the following terms:

* Understanding: The fellowship between teacher and pupil should be marked by an understanding of what it is to be a child and also of the demands of propriety.

* Confidence: The trustful companionship between teacher and child (pupil) should be marked by respect for the child's dignity and by acceptance and an intension to care for the child.

* Authority: Companionship in terms of the demands of propriety should be marked by amenability, being addressed and summoned, obedience, recognition of authority, emulation of authority and submission to norms.

* Association: The encounter between teacher and pupil should be characterised by togetherness aimed at the basic upbringing of the child.

* Encounter: The companionship between teacher and pupil should deepen into togetherness and empathy.

* Accepting responsibility for involvement: The teacher accepts full responsibility for his involvement with the pupil, and the pupil accepts responsibility for his share in this involvement.

* Intervention: The teacher intervenes to prevent the pupil from losing his way.

* Assent: The teacher supports the pupil in doing what is proper.

* Periodic relinquishment: The pupil is permitted to internalise what has happened up to this point on his own, in the absence of the teacher.

* Attribution of meaning: The pupil's world consists of everything he can understand, hence everything that has meaning for him.

* Exertion: The pupil has to be helped to use his full potential and do his very best in everything he undertakes.

* Living according to norms: The pupil should be guided to *want* to live in accordance with the demands of propriety.

* Venturesomeness: The pupil should be taught to be venturesome in embarking on a proper way of life in the company of others.

* Gratitude: The pupil should be taught to live gratefully.

- * Responsibility: The pupil should be led to accept increasing responsibility for respecting others as fellow travellers on the road to shared adult values, developing a sense of solidarity, recognising an obligation to be accessible to others.
- * Hope: The teacher should help the pupil to imagine the future, interpret the past, focus on the future, decide in the present about the future, work in the present towards the future, understand the demands of the future, enter into dialogue about the future.
- * Design: The teacher should guide the pupil in actualising his positive potential with a view to the future.
- * Fulfilment: The pupil should gradually yet increasingly be led to realise that he has a vocation to fulfil.
- * Respect: The teacher should guide the pupil to respect human dignity.
- * Self-understanding: The pupil should be guided to a high level of self-understanding, which is one of the essential qualities of adulthood.
- * Freedom: The teacher should guide the pupil into the freedom to accept responsiblity.

These essential pedagogical qualities apply to teaching and education in general and should also characterise the educational style of teachers who are involved with gifted pupils. They can in fact serve as broad guidelines for dealing with gifted pupils. Such an educational style provides pupils with an opportunity for optimal, positive self-development, the formation of a positive, realistic self-concept, and self-actualisation.

2) **Meeting the distinctive demands made by gifted pupils on the educational relationship**

Many teachers do not have the specialised knowledge required to meet the needs of gifted children. Consequently problem situations may disrupt the educational relationship.

A number of researchers have commented on ways of dealing with gifted pupils. The following suggestions can be made on the basis of the work done by Cutts and Moseley (1958: 173-175), Gowan and Demos (1964: 391-392), Nelson and Cleland (Barbe & Renzulli 1975: 439-445), Knapp (Colangelo and Zaffrann 1979: 447-448), Barbe and Frierson (Barbe and Renzulli 1981: 410-411), DeJames (1981: 34), Goodale (Barbe and Renzulli 1981: 337-383), Khatena (Gowan, Khatena and Torrance 1981: 240-245), Tonelson (1981: 96-99), Torrance (Barbe and Renzulli 1981: 441-445), LeVine and Evans (1983: 30-31) and Taylor and Van der Westhuizen (1983: 119-120):

- * Teachers should strive for an emancipatory style of education as described in Paragraph 6.3.3(2)(c)1).

* They should attempt to establish a classroom atmosphere that will foster the optimal, positive development of the self, the formation of a positive and realistic self-concept, and self-actualisation. This aim is promoted by

  - being accepting and supportive;
  - avoiding the use of threats to induce pupils to achieve;
  - identifying, recognising and accepting individual differences between pupils;
  - presenting pupils with differentiated learning experiences;
  - involving pupils in the planning of their own work and that of the group;
  - providing a sufficiently structured environment to induce a sense of security;
  - providing sufficient latitude for pupils to use their own initiative;
  - encouraging original, critical, creative thinking;
  - keeping communication channels open.

* It is important for teachers to have a positive approach to the manifestation of creative ability. Exceptionally creative gifted pupils should be accepted despite their unusual modes of conduct; there should be empathic understanding and openness to their ideas. Teachers should also encourage the manifestation of exceptional creative powers, and to this end they need to understand the creative process. In this regard teachers should pursue the following goals:

  - Acceptance, understanding, respect and assistance in respect of such characteristics of gifted pupils as are essential to the manifestation of creativity.
  - An understanding of socially unacceptable behaviour that may occur in the case of exceptionally creative gifted pupils.
  - Recognising and accepting the importance of developing self-reliance, autonomy and individuality.
  - Identifying undiscovered and unmanifested creative abilities in gifted pupils.
  - Accepting and understanding the need, often encountered in such pupils, to work alone.
  - Expressing criticism in meaningful and constructive ways that will not unnecessarily impede the manifestation of creative gifts.

- A degree of differentiation in subject matter that will encourage exceptionally creative gifted pupils to achieve in the areas where their abilities, aptitudes and interests lie.

- Providing opportunities for such pupils to contribute to the welfare of the group - in other words, channelling their creative abilities in a way that will benefit others as well as themselves.

- Encouraging *constructive non-conformity,* particularly where there is a risk of *destructive non-conformity.*

- Encouraging the pupils and providing guidance in respect of self-initiated projects.

- A meaningful emphasis on individual differences between pupils.

- Helping exceptionally creative gifted pupils to cope with tensions in peer group relations.

* In considering and planning the teaching-learning situation, teachers will have to allow for conduct differing from that of non-gifted pupils. They will have to adjust to the gifted pupil's greater appetite for knowledge and his need to get to the root of issues. Teachers should therefore prepare themselves intensively for the subjects they teach since gifted pupils are likely to ask searching questions.

* Teachers should help gifted pupils to appreciate the intrinsic satisfaction that can be derived from work. The optimal development of abilities takes hard work and perseverance, and the gifted pupil has to realise that it is important to acquire these virtues.

* Although teachers should set high standards of achievement for gifted pupils, they should never exert unwholesome pressure.

* In planning subject matter and learning opportunities and experiences, teachers should be aware of the needs and characteristics of gifted individuals. They should test alternative strategies to ascertain which are most appropriate for specific pupils.

* Teachers should never see gifted pupils as passive recipients of authoritatively imparted knowledge. They should be aware that such pupils are capable of generating new knowledge, and for this reason the teaching-learning situation should wherever possible provide opportunities

  - for exploration, initiative, curiosity, originality and a critical, questioning approach;

  - for pupils to form their own opinions and attitudes;

  - for practising problem-solving skills with the emphasis on the process rather than the product.

- for classifying and categorising information and objectives;
- for comparing and contrasting various kinds of information;
- for making value judgements in terms of various criteria;
- for using information sources;
- for initiating pupils' own "research projects";
- for discussing and debating matters of interest;
- for taking part in class discussions with a strong emphasis on the value of group dynamics;
- for planning future activities;
- for evaluating learning experiences.

* Teachers need to remember that gifted pupils frequently have problems in making educational and occupational choices. Since the optimal and positive development of the self, the formation of a positive and realistic self-concept, and self-actualisation are decisive factors in the process, it is essential for teachers to help these pupils with their choices by assisting personality development.

3) Résumé

Teachers' options for dealing with gifted pupils can be summarised by saying that teachers should never

* be intimidated by the exceptional intellectual and other potentialities of gifted pupils: the relationship should always be a pedagogical one;

* be unduly anxious about unconventional behaviour: gifted pupils, especially those with exceptional creative powers, often behave in unusual ways;

* place undue emphasis on the results of intelligence tests, which do not provide a detailed picture of all the abilities of a gifted child;

* hesitate to depart from conventional methods if the needs of a gifted pupil require this: it is frequently necessary to be flexible about programmed matter, educational strategies and forms of education;

* hesitate to encourage the manifestation of creative gifts;

* forget that there are individual differences between gifted children that need to be understood;

* attach too much importance to summative product evaluation;

- restrict the development of initiative in gifted pupils by an authoritarian approach;

- dismiss education for gifted pupils as unnecessary from any mistaken notion that such pupils can "look after themselves";

- fall into the trap of assuming that pupils whose achievements do not come up to expectations are necessarily not gifted.

(3) Co-operation and liaison between parents and teachers in respect of education for gifted pupils

(a) Indispensability of such co-operation and liaison

The formation of positive attitudes would benefit greatly by really close co-operation between parents and teachers in this area and in the provision of education for gifted pupils. As Sanborn (Colangelo and Zaffrann 1979: 397) puts it: " ... when the school and the parents work together on the education of a gifted child, results may be more favorable than might be expected if school and parents work independently".

Teachers should never underestimate the contribution parents can make. In the words of Sanborn (Colangelo and Zaffrann 1979: 400), once again, parents "... can be the most powerful resource the school has for securing support generating and implementing appropriate developmental experiences for gifted children". On the other hand, teachers can be a vital source of information to parents. Parents often need information about their children which only the school can supply. For instance teachers can tell parents how to meet the needs of their gifted children. This view is supported by a number of researchers, including Cutts and Moseley (1958: 222-236), Smaltz and Mathisen (Crow and Crow 1963: 75-76), Grossi (Jordan and Grossi 1980: 89-100) and Karnes and Karnes (1982: 242).

The most important reasons for close co-operation and liaison between parents as primary educators and teachers as secondary educators are that the school as an institution is an extension of the home, and that the school carries out those teaching and educational functions which parents cannot fulfil. Therefore the nature and goals of the teaching and education provided by parents should be congruent with those of the teaching and education the teachers provide. Unless this happens, says DeJames (1981: 34), behavioural disorders may result.

(b) Strategies for co-operation and liaison between parents and teachers in respect of the education of gifted pupils

The following are possible ways of promoting co-operation and liaison between parents and teachers in respect of the education of gifted pupils.

- Newsletters. From time to time, schools could circulate newsletters/brochures to parents and the community at large to disseminate information about giftedness, gifted pupils and education for gifted pupils.

* Manuals for parents of gifted children. Schools could supply parents with manuals containing information about such matters as the nature of giftedness, how to identify it, the provision of education for gifted pupils, ways in which parents can promote the development of giftedness, ways in which parents can deal with gifted children, and the correct attitude of a parent to a gifted child.

* Meetings and interviews. It is vital for parents - both individually and in groups - to receive guidance about giftedness periodically. Such personal contact with teachers and other experts will *demonstrate* to parents the official interest that exists concerning the question of giftedness.

* Educational outings. Parents should be involved in such activities with their gifted children and the teachers, thereby bringing about a more informal contact between parents and teachers.

* Courses for parents. From time to time there should be short courses for parents on the education of their gifted children.

* The continuation at home of school activities. It is important for parents to contribute to the formal education of their children. Closer liaison with the school could supply hints for home activities that would complement the teaching given at school.

  Schools could supply such information to parents on a structured basis.

* Progress reports. Teachers should supply parents with regular reports on the school progress of their gifted children.

* Study groups. Teachers should assist in forming study groups consisting of parents of gifted children. Such groups could help teachers by collecting and disseminating information on giftedness, gifted pupils and education for gifted pupils. These study groups could also give parents a broader perspective on giftedness.

So important is this co-operation and liaison between parents and teachers in respect of giftedness, gifted pupils and education for gifted pupils that schools should have a carefully considered policy and plan of action in this regard.

6.4 CONCLUSION AND RECOMMENDATIONS

The literature on the formation of positive parental and teacher attitudes on giftedness, gifted pupils and education for gifted pupils clearly indicates that parents and teachers should be aware that gifted pupils have characteristics and needs that make specific demands on the educational relationship. An inability on the part of parents and teachers in the educational relationship to allow sufficiently for these characteristics and needs may be the result of existing negative attitudes which may in turn generate further negative attitudes. It is clear also that the formation of positive attitudes is a cardinal requirement for the successful education of gifted pupils: negative attitudes can spell disaster for the whole project.

The following recommendations are therefore made:

Recommendation 1: At macrolevel, steps should be taken by the National Co-ordinating and Advisory Committee: Provision of Education for Gifted Pupils and at mesolevel by the Departmental Co-ordinating and Advisory Committee: Provision of Education for Gifted Pupils to formulate policies permitting the creation of strategies for instructing both parents and teachers in the nature of a positive attitude towards giftedness, gifted pupils and education for gifted pupils.

Recommendation 2: At microlevel the school co-ordinating committee: gifted pupils should devise methods of implementation (such as in-service training, study groups, seminars, symposia and the like) in respect of the proposed strategies for the promotion of positive attitudes to giftedness, gifted pupils and education for gifted pupils, to inform parents and teachers with regard to

* the nature and essence of giftedness;
* the nature of special education provision for gifted pupils;
* the characteristics and needs of gifted pupils;
* the achievement motive;
* the development of the self, the formation of a self-concept, and self-actualisation;
* the establishment of an educational relationship that will optimise the actualisation of abilities.

Recommendation 3: Parents need to bear in mind that they remain the primary educators even after their children have started school. They should establish an educational climate and relationship that will optimise the development of the self, the formation of a positive and realistic self-concept, and self-actualisation. In dealing with their gifted children, parents should

* obtain the necessary perspective on such children;
* approach positively, and encourage the manifestation of exceptional creative powers;
* provide their children with sufficient learning opportunities and experiences;
* establish adequate family relationships;
* ensure that they set a worthy normative example;
* create effective authority structures;

* establish effective communication between themselves and their children;

* ensure that their gifted children's abilities do not develop one-sidedly.

The school co-ordinating committee: gifted pupils should provide guidance for parents by way of training courses, study groups, seminars, symposia, and the like.

Recommendation 4: The school co-ordinating committee: gifted pupils should enable teachers, by way of in-service training, study groups, seminars, symposia, and so on, to

* maintain an emancipatory style in the teaching and education of gifted pupils, avoiding both the authoritarian and the liberalistic styles on account of the restrictions these styles impose on the development of giftedness;

* attempt to meet the demands made on the educational relationship by gifted pupils, in which connection it is essential for teachers to

  - strive for a classroom atmosphere or climate that promotes the optimal, positive development of the self, the formation of a positive, realistic self-concept, and selfactualisation;

  - maintain a positive attitude to the manifestation of exceptional creativity;

  - allow, in their consideration and planning of the teaching-learning situation, for conduct unlike that of pupils who are not gifted;

  - help gifted pupils to realise the value of intrinsic work satisfaction;

  - encourage gifted pupils to strive for high levels of achievement;

  - take the characteristics and needs of gifted pupils into account in the planning of subject matter and learning opportunities and experiences;

  - be aware that gifted pupils, far from being passive recipients of knowledge imparted in an authoritarian manner, are in fact able to generate *new knowledge*;

  - support gifted pupils in making educational and occupational choices.

Recommendation 5: Both parents and teachers need to be aware of the importance of co-operation and liaison in the education of gifted pupils, and schools should formulate and implement a sound policy in this regard. The necessary guidance should be supplied by the school co-ordinating committee: gifted children.

CHAPTER 7

CURRICULUM DEVELOPMENT FOR GIFTED PUPILS

7.1 ORIENTATION AND DEFINITION

7.1.1 Introduction

One of the stipulations of the National Education Policy Act (Act 39 of 1967) is that pupils should be educated in accordance with their ability, aptitudes and interests. In the course of the HSRC Investigation into Education this principle was affirmed: the Work Committee: Special Educational Needs identified certain children who, on account of their distinctive attributes, needs or circumstances, required an education different to that considered adequate for the bulk of the pupil population. One such category was gifted children, and the Main Committee of the HSRC Investigation into Education accordingly recommended that special attention be paid to the "design of suitable educational programmes" for these children (HSRC, Main Committee Report, 1981: 157). The recommendation of the *Work Committee: Special Educational Needs* (1981: 184-185) reads as follows: The designing of educational programmes for the highly gifted forms the core of provision of education for these children. These programmes should cater for the specific interests of individual pupils and should as far as possible be designed for all school subjects.

In the White Paper on the Provision of Education in the Republic of South Africa, the government accepts the recommendation concerning the creation of a central service for curriculum development for the RSA (RSA, White Paper on the Provision of Education, 1983: 42). By virtue of this acceptance it would seem that all curriculum development (at any rate in respect of core curricula/minimum curriculum content) will be delegated to this central service - which would include the development of curricula for gifted pupils. Curriculum theory and practical curriculum development do not differ essentially for different categories of learners, although the eventual *curriculum* for gifted pupils will differ from the curricula intended for other categories of learners.

7.1.2 Defining the concept

(1) Introduction

The literature on curricula, the reports of the Work Committee: Curriculum Development and the main committee (both of the HSRC Investigation into Education), the advice of the Interim Education Task Group and the government White Paper use various terms for "curriculum" and "curriculum development" (and related concepts). This diversity of terms, some of which are synonymous although not necessarily interpreted in the same way, creates confusion and misconceptions. To avoid confusion, and in the interests of terminological consistency, the following definitions are proposed for the purposes of this report.

(a) **Broad/total curriculum**

By this is meant the set of subject/activities that must/may be completed in a school phase, course of study direction, as well as the way in which such subjects/activities are structured. (This definition is based on that contained in the report of the Work Committee: Curriculum Development (HSRC, Curriculum Development 1981: 90-91).) The broad/total curriculum is concerned less with the actual learning content than with its structure. Thus the learning content will be divided into subjects/activities/modules and then it will be determined how these should be presented, both chronologically and organisationally.

(b) **Subject curriculum**

This is the total package of detailed learning content and possible teaching aids for a given subject during a particular school phase or for a course or study direction. It is constructed on the basis of the relevant syllabi, regulations, suggestions, interpretations and explanations relating to the learning content and the teaching of the content. (This definition is based on that contained in the report of the Work Committee: Curriculum Development (HSRC, Curriculum Development 1981: 91-92).) In addition to the detailed learning content and guidelines mentioned in the definition, the subject curriculum may also include study guides, manuals, work charts and even textbooks.

(c) **Core syllabus/minimum learning content**

This refers to the mandatory or essential topics or themes to be incorporated into syllabi by two or more institutions/schools/teachers. (This definition is based on that contained in the report of the Work Committee: Curriculum Development: HSRC, Curriculum Development 1981: 93).) The term "minimum learning content" is preferred, since "core curriculum" could refer to something completely different and may therefore be confusing. (See Tanner and Tanner 1975: 480-486.)

(d) **Syllabus**

A syllabus is a brief synopsis of compulsory and optional topics or themes (learning content) in a given subject/module/activity that have to be studied at a particular level and within a given period. (This definition is based on that contained in the report of the Work Committee: Curriculum Development (HSRC, Curriculum Development 1981: 92).) In addition to a point-by-point description of learning content, the syllabus may also include detailed explanations of topics, syllabus aims and proposed methods of arranging, presenting and evaluating the subject matter.

(2) **Curriculum development**

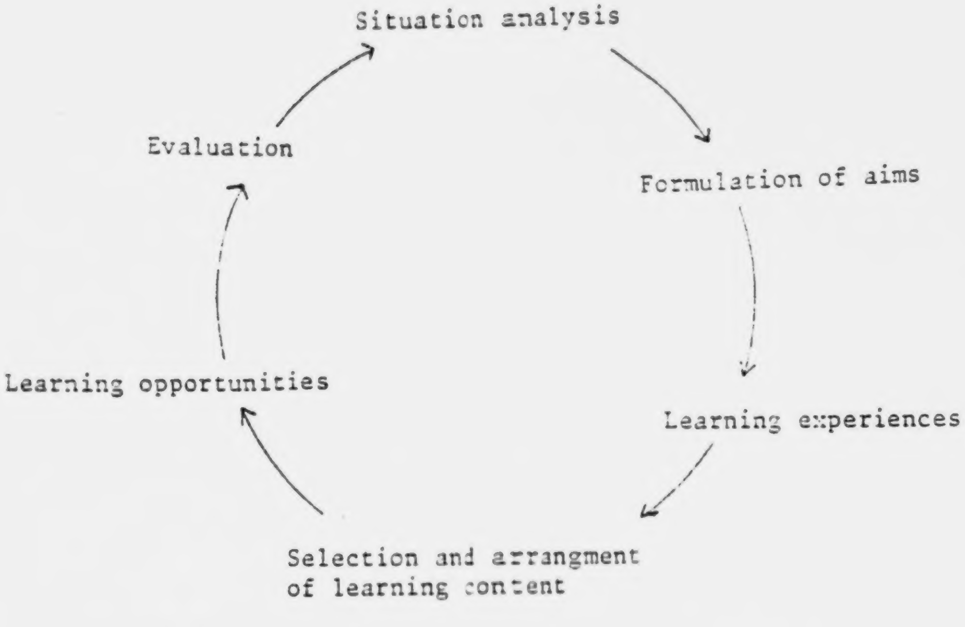
Curriculum development refers to the activities through which a curriculum is created. The essential activities in this regard appear to be *formulation of aims and selection and organisation of subject matter*. However, with more sophisticated teaching practices - particularly in formal education - additional curriculum development activities are identified and implemented by designers to ensure that as little as possible is left to chance in the development and eventual implementation of a curriculum. Such additional activities may include situation analysis, guidelines for didactic and formal aspects of the curriculum, evaluation of contents and the design of strategies for implementation of the curriculum.

Both the extent of the aforementioned activities and the way in which they are conducted will depend on such matters as the target group for which a curriculum is being developed and the curriculum development model adopted.

7.2 MODELS OF CURRICULUM DEVELOPMENT

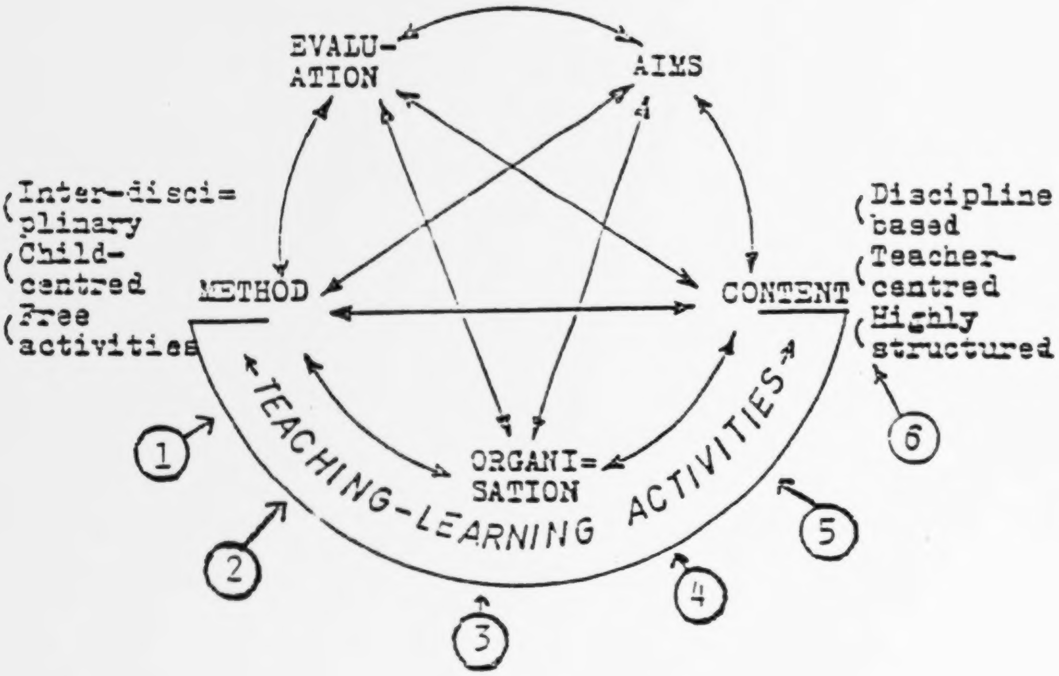
The pursuit of more effective curricula and a more scientific way of developing them has resulted in numerous models of curriculum development in recent times. Among the best-known models in overseas literature are those of Taylor, Taba, Wheeler, Nicholls and Nicholls, and Tanner and Tanner. Notable local models are those of Krüger, Walters and Cawood, Carl and Blanchenberg. The latter three models are depicted diagrammatically below.

7.2.1 Systematic representation of the curriculum development model of R.A. Krüger (1980: 34)


Situation analysis
Formulation of aims
Learning experiences
Selection and arrangment of learning content
Learning opportunities
Evaluation

The outstanding features of Krüger's model of curriculum development is, firstly, its cyclic progression. This means that curriculum development does not end with evaluation: the feedback of evaluation results gives rise to revision and innovation. A second feature is the functional interrelationship between the various components, implying that any modification to one component will necessarily influence all the others. (For instance, modifying the subject curriculum aim would entail modifications to the selection of subject matter, learning experiences, learning opportunities and evaluation.)

7.2.2 The curriculum development model of S.W. Walters (1978: 83)


EVALUATION
AIMS
METHOD
CONTENT
ORGANISATION
TEACHING-LEARNING ACTIVITIES
(Inter-disciplinary
(Child-centred
(Free activities
(Discipline based
(Teacher-centred
(Highly structured
1
2
3
4
5
6

Walters' model represents curriculum development as a cyclical process. Walters (1978: 84) summarises the characteristics of his model thus:

1. The model provides for five essential curriculum elements, viz.

   (a) aims; (b) content; (c) organisation; (d) method; (e) evaluation.

2. The diagram indicates that each of these elements cannot be treated in isolation but that they are closely interrelated.

3. The three elements, content, method and organisation, form a special relationship, indicated by the term "teaching-learning activities".

4. The model can be applied to different levels of schooling as indicated by the Numbers 1 to 6. Number 1 indicates the type of balance within the teaching-learning activities suitable for science education in a preprimary (nursery school) situation. This involves, for example, a nature corner provided with suitable material to be observed and handled by the pupils. Learning takes place as a result of discovery and questions initiated by individual pupils themselves. At the other extreme, indicated by Number 6, a lecture-type presentation at tertiary level is suggested. For the purpose of this model, these two distinctly different types of teaching-learning activities will be called *activity levels,* and all the different possible activity types resulting from the variety of interaction between content, method and organisation, will be called the *activity range.*

7.2.3 The curriculum development model of Cawood, Carl and Blanckenberg (Work Committee: Education for Highly Gifted Pupils. Draft report: Curriculum Development for Gifted Pupils 1984: 14-15)

The authors maintain that this model seeks to make a clear distinction between *core subject matter* (which in some subject fields is compiled by such bodies as the JMB, CUP and interdepartmental committees and is eventually embodied in core syllabi) and *learning content.* The latter component is outlined in greater detail in textbooks, self-activity modules and the like.

The essential difference between broad, overarching *subject aims* and more specific *teaching or lesson aims* is indicated partly by their respective positions in the curriculum development cycle.

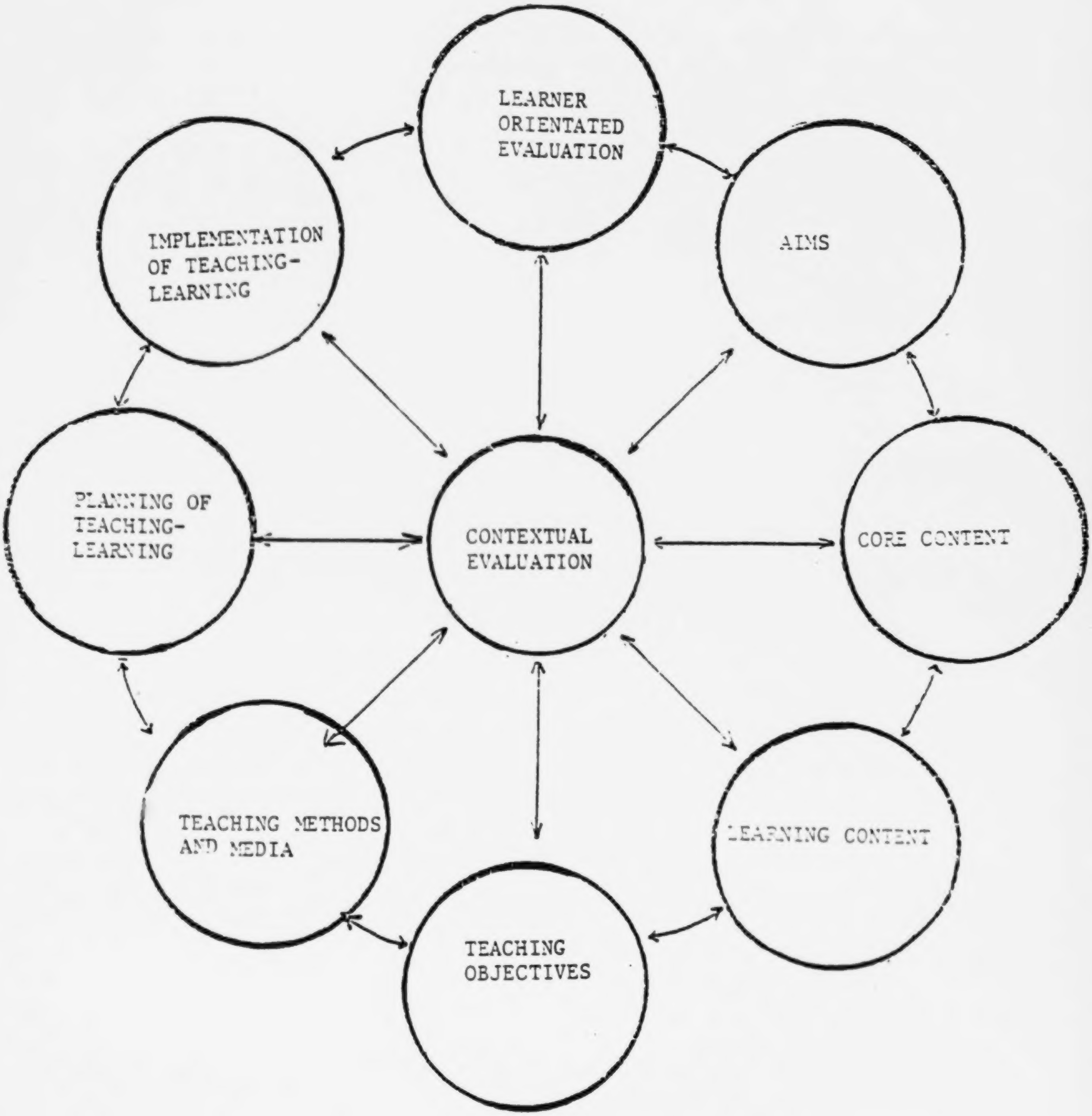
The authors explain the concept of contextual evaluation as follows: The positioning of contextual evaluation (which includes *situation analysis*) stresses the central co-ordinating function of evaluation among the different curriculum components. The curriculum is evaluated continually by means of contextual evaluation. Ongoing contextual evaluation furnishes the data for curriculum development (p. 15). (Translation)

7.3 STEPS IN CURRICULUM DEVELOPMENT

Since a central curriculum development service will undoubtedly adopt or design a particular model of curriculum development as a basis for its activities, it would be presumptuous at this stage to hold up any particular model as the only one for developing curricula (including those for gifted pupils). Irrespective of the model that is eventually adopted or designed, however, the foregoing models by various experts appear to manifest a definite pattern with regard to the activities performed in sophisticated curriculum development. The activities identified are the following:

- Situation analysis
- Formulation of aims
- Selection and organisation of content
- Determination of and suggestions for didactic guidelines
- Evaluation

These activities will be briefly outlined.


LEARNER ORIENTATED EVALUATION
AIMS
CORE CONTENT
LEARNING CONTENT
TEACHING OBJECTIVES
TEACHING METHODS AND MEDIA
PLANNING OF TEACHING-LEARNING
IMPLEMENTATION OF TEACHING-LEARNING
CONTEXTUAL EVALUATION

7.2.1 Situation analysis

In sophisticated curriculum development a situation analysis is regarded as the first step in revising, innovating or modifying a curriculum. This does not imply that curriculum development is a linear process. Revision or innovation could originate from any activity in the curriculum development cycle. Thus it may be decided to arrange the subject matter differently or to pursue certain (new) subject curriculum aims. As pointed out earlier, any such amendment will entail amendments to other facets of the curriculum as well. Nevertheless most authors maintain that planned, scientific curriculum development should be based on a thorough situation analysis.

The literature (cf. Tyler, Tanner and Tanner, Nicholls and Nicholls, Hunkins, Kaufman and English) indicates that the first step in a situation analysis is to examine the philosophical and psychological premises of the curriculum. A practical method of conducting such an analysis is to determine the respective demands made on curricula by the *learners* (target group), the *subject* (learning content) and the *community,* and to ensure that both the *microsituation* (classroom, school, immediate environment) and the *macrosituation* (ideological, social, political and economic climate) are analysed.

A situation analysis for the development of curricula for gifted pupils will have to take account of the special characteristics of this target group and the concomitant needs to be fulfilled. (Cf. Chapter 3, Identification of gifted pupils.)

7.3.2 Formulation of aims

A cardinal activity in curriculum development is to formulate the broad aims or goals envisaged for the curriculum. Initially only general aims are specified, which are then refined and linked to particular subject matter in the course of selecting and arranging the content.

From the nineteen-sixties until quite recently, curriculum developers have been fond of spelling out detailed behavioural objectives in the belief that this would help them create a so-called "teacher-proof" curriculum. Research indicates, however, that this practice has largely been abandoned: at present it is widely accepted that the specification of behavioural objectives should be left to the teacher in the microlevel curriculum development situation. Hence the main thing in developing curricula for gifted pupils is to consider the guidelines and objectives described for specific subjects and groups of subjects in Chapter 8.

7.3.3 Selection and organisation of learning content

On the basis of the situation analysis and the broad objectives that have been determined, the learning content is selected and organised. Curriculum content is derived from real life and comprehends everything of which human beings are aware, including connotations, meaning and patterns of meaning, human knowledge, human preferences and beliefs, sensations, experiences, skills, norms and values, morals, customs and conventions. Since the content of real life is too extensive to be transmitted to the child *in toto,* a selection has to be made. Learning content should be so selected as to give the pupil a representative cross-section of life as it is. It should moreover ensure the proper development of the pupil in his totality. He should not only acquire knowledge (cognitive moulding), but should be afforded certain life experiences (affective moulding) and learn certain skills.

A proper selection of learning content from the total spectrum of the real world requires the application of certain criteria. Maree (1983: 19) points out that when practicable criteria for the selection of learning content are either unavailable or not applied, the curriculum is left to the mercy either of unfair pressure from the social order or of unresolvable competitive pressure from the different sciences.

It is therefore essential to establish criteria for the selection of learning content, as has been done by various authors on curriculum development, both locally and overseas. Most of these criteria are characterised by their close correlation with the aims of teaching and learning. One example of such a set of criteria is Mentz's précis (1983: 66-67) taken from Van der Stoep and Louw's work: Inleiding tot die didaktiese pedagogiek, 1976:

* The learning content should reveal the categorial structure of reality and should be representative of the total possible fund of knowledge.

* The curriculum should be so compiled as to take full cognisance of the various fields - the pragmatic, the theoretical, the aesthetic and the ethical. This implies that no one field should be overemphasised at the expense of the others.

* The content should be selected with due regard to the training of the teacher - both his knowledge of the subject and his ability to handle that subject matter didactically. This implies direct consultation between curriculum developers and training institutions so as to eliminate possible discrepancies.

* The content should serve the cause of education, implying that the norms and values prevailing in a community should be communicated to the child via the subject matter. In this regard Kruger refers to the criteria of norm orientation and pedagogic actualisation.

* The content should be such that it will constitute a theme for communication between pupil and teacher. This implies that it should be meaningful and existentially relevant to both parties. Existential relevance includes relevance both to the present and to the future.

* The content should be graded to the pupil's level of readiness. Readiness refers to his cognitive, affective, physical and language development as well as to the level of his existing knowledge and skills. Whereas care should be taken not to select subject matter beyond the pupil's level of readiness, it is equally dangerous to select excessively easy subject matter,

since this could result in boredom. Subject matter should always be mastered with a measure of effort.

* The curriculum content should not merely preserve and maintain, but should broaden and develop the existing culture. This implies adopting what is good and worthy of emulation in other cultures so as to work towards an ideal culture. When the pupil has mastered the subject matter he should reflect the characteristics of a typical member of that culture.

* The content included in the curriculum should give the child a general foundation while at the same time affording optimal opportunity for subsequent specialisation. Kruger (1980: 34-36) adds a further dimension by stipulating the criterion of polyvalency. By this he means that the subject matter should be such as to equip the learner to contend with divergent existential problems on an integrated basis.

* The content should be such that the elementary knowledge composing it should be pursuable to a fundamental level. This means that after mastering the subject matter the child should be capable of transcending his present situation: on the strength of his mastery of the subject matter he should be able to relate to reality in new ways. (Translation)

Walters (1978: 198-199) formulates the following six criteria for the selection of learning content:

1. "*Validity.* (a) Is the content valid in the sense that it is appropriate, and lends itself to the attainment of the *curriculum aims?*

   (b) Is the content valid in the sense that it represents *authentic, true and up-to-date knowledge?*"

2. "*Significance.* (a) Is the content significant in so far as it provides for the understanding of *principles and concepts* and for the related, *essential factual knowledge which are meaningful* at the appropriate activity level of the curriculum?

   (b) Is the content significant insofar as it conveys the *methods of the investigative procedures* characteristic of the subject discipline(s)?"

3. "*Balance.* Does the content represent an appropriate balance of *breadth of coverage* (scope) and *depth of presentation and understanding* (difficulty and complexity)?"

4. "*Relevance.* Is the content relevant to *life in general* and to the *life of the pupil* in particular, i.e. to the *social and cultural* environment of the pupil?"

5. "*Interest.* Does the content *take into account* and *provide for* the interests of pupils?"

6. "*Consistency.* Is the content internally consistent in that the various parts are *non-contradictory,* form a *mutually supportive hierarchy* of facts, concepts and principles, and are *correlated* as far as possible?"

Finally, it should be pointed out that the content should be selected on the basis of, and judged against all these criteria and that a single criterion should not be elevated to the position of the main determining criterion.

These criteria apply to the selection of curriculum content generally. In the next chapter specific guidelines are provided for the selection of subject matter in respect of particular subjects and subject directions for gifted pupils.

Selected content cannot be incorporated into the curriculum arbitrarily but is normally *organised* in a sequence according to a particular rationale (criteria). Thus subject matter can be arranged in a *logical order* in terms of the distinctive character and structure of the subject in question; in other cases it can be *organised psychologically* (where the subject matter must be compatible with the learner's level of readiness), or circumstances may indicate a *pragmatic organisation.* Apart from these general considerations in organising learning content, various authors give different classifications of principles or criteria in this regard. *Van der Stoep and Louw* (1982: 98-104), for instance, cite the following principles for the organisation of learning content: chronological, symbiotic, linear, punctual and spiral organisational principles. *Walters* (1978: 219-226) lists the following six organisational criteria, which merit the attention of curriculum designers:

- Systematic structure of the subject (which is not necessarily the same as the strictly logical structure of the discipline as such).
- Developmental sequence (i.e. the arrangement of subject matter should be consonant with the development of the pupil).
- Cumulative learning (i.e. allowing opportunity for acquired knowledge to be internalised and applied; for proper mastery of knowledge and skills; for enrichment and expansion; and for more fundamental understanding).
- Integration (of different learning contents within the subject and with other subjects and disciplines).
- Methodological sequence (should coincide with accepted methodological patterns, for instance from the concrete to the abstract, from the known to the unknown, from the particular to the general and so on).
- Practical feasibility (organisation should allow for regional differences, seasonal variation and the like).

Curriculum developers for gifted pupils will have to establish which criteria for content organisation best satisfy the needs of this category of children and will have to organise the learning content accordingly.

7.3.4 Didactic guidelines/learning opportunities

The question of whether a curriculum should include explicit didactic considerations, suggestions or guidelines is a knotty one on which even recognised curriculum experts do not agree. The interconnectedness of didactic form and teaching content is such that it is not always possible to view either component in isolation. The nature of the subject matter sometimes imposes certain didactic forms on the teaching-learning situation. Similarly, the characteristics and needs of the target group (e.g. gifted pupils with special educational needs) will determine which formal didactic considerations have relevance for the teaching-learning situation. In the formal teaching situation certain factors, such as the personality and training of the teacher and the availability of teaching aids, will affect the choice of a didactic form. Certain subject matter can moreover be presented in different ways/forms. Which form will be most effective will depend largely on the elements constituting the actual teaching-learning situation. Because the formal education situation in the RSA is so diversified, one should guard against rigid adherence to methodological models and blueprints. For this reason, didactic guidelines are not seen as an essential part of the curriculum. The choice of didactic forms, the reduction of subject matter and the choice of actualising principles and teaching aids are a didactic task for the teacher at the microlevel of curriculum development. Nevertheless there are many situations where it is necessary and even desirable that the curriculum should indicate not only content but also provide detailed didactic guidelines.

Decisions on didactic guidelines and particular teaching methods for gifted pupils will not merely have to allow for the characteristics and needs of this group of pupils but will have to allow for other determinants such as the existing school system, availability of facilities, the training of the teachers concerned and logistical factors.

7.3.5 Evaluation in curriculum development

Although the terms *formative* and *summative evaluation** are commonly used in the literature, it should be clearly understood that the evaluation activity is not confined to specific phases of the curriculum development process.

Thus the model of curriculum development designed by Cawood, Carl and Blanckenberg assigns "contextual evaluation" a central position in the curriculum development cycle and links it to every phase in the process. It moreover regards situation analysis (determining the initial situation) as integral to contextual evaluation. The initial evaluation of developed curriculum material usually occurs when the material is submitted to experts (who had no hand in its development) for scrutiny and comment. Sophisticated curriculum designers usually design instruments (tests, questionnaires) for evaluating developed material in conjunction with the development of the material itself.

---

* Evaluation conducted in the course of curriculum development is internationally referred to as formative evaluation, while evaluation undertaken after finalisation of the curriculum and after it has been implemented for several years is known as summative evaluation.

Once the material has been developed and approved by the relevant advisory or planning committee, it is regarded as "experimental" in the sense that it still has to be tested and revised. In the course of such testing of the draft curriculum kit, information is gathered by means of a predetermined feedback system so as to effect necessary amendments or corrections. Sources of information for this (*formative*) evaluation are the following:

* Comment from teachers and inspectors;
* previously compiled objective tests for pupils;
* interviews with pupils and even with parents;
* visits to participating schools by researchers/members of the project team.

After the trial period, which usually lasts a year or two, the modified, improved subject curriculum kit is implemented. During the first year of implementation, various modifications may still be introduced.

After implementation, summative evaluation plays a major part in the development process, triggering off a fresh cycle of modifications, improvements and innovations to a subject curriculum. Deficiencies in implemented subject curricula are established by means of such evaluation - for example, by

* study of moderators' reports and examination scripts;

* questionnaires sent to and interviews with inspectors, examiners and moderators;

* questionnaires sent to and interviews with lecturers, teachers and pupils;

* objective class tests for pupils;

* questionnaires sent to employers.

Thus there is constant monitoring of the development and improvement of curriculum objectives, content and subject-didactic guidelines with a view to satisfying specific learning requirements.

The foregoing activities in curriculum development apply to all types of education. The White Paper on the Provision of Education in the RSA (1983: 42) recommends the introduction of a central curriculum development service. Such a service would have the task of designing a curriculum development model for the RSA, according to which the curricula for gifted pupils among others would then be developed.

There are certain points to be borne in mind when developing curricula for gifted pupils. These include curriculum development for types of education provision outside the formal education system (extracurricular centres), requirements for curricula for gifted pupils, and specific goals and guidelines for curriculum development for subjects/groups of subjects. (Goals and guidelines for curriculum development for subjects/groups of subjects are dealt with in Chapter 8).

7.4 SOME REQUIREMENTS THAT CURRICULA FOR GIFTED CHILDREN SHOULD SATISFY IN ORDER TO CATER FOR THEIR LEARNING AND EDUCATIONAL NEEDS

7.4.1 Commitment to a task

The curriculum should create an atmosphere that will motivate gifted pupils to undertake exacting work. Gifted pupils should learn at an early age that even though they find learning easy and enjoyable, nothing meaningful is ever achieved without commitment and effort. As the leaders, inventors and researchers of the future, these pupils should become acquainted with the pressures of the heavy programme that will confront them in later life.

Sawyer (1983: 65-69) maintains that it is the curriculum developer's duty to provide "a satisfactory outlet for energy". Gifted pupils are usually energetic children and their urge and predilection for taking on challenges should be stimulated.

7.4.2 Attention to the gifted child in his totality

The danger of disregarding the development of the child in his totality is more real in the education of gifted pupils than in that of ordinary children. Because their exceptional intellectual ability is so much in the limelight, care should be taken lest other important aspects of their development to adulthood are neglected. Intellectual precocity is not adulthood, and therefore curricula for these pupils should cater specifically for the following:

* Acquisition of knowledge
* Moulding of character and attitudes
* Development of skills
* Development of thought processes
* Motivation and guidance
* Balanced, responsible education of the child in his totality

None of the aforementioned formative factors can even exist independently. Intellectual capacity features in every learning situation and its development is therefore an overarching, perennially relevant aim. The interaction and interdependence of the various aspects of personality, and the way they complement one another, should never be overlooked.

In curriculum development one will therefore continually have to ask: "Which formative factor pertains primarily to this aim?" Also: "What subject matter and pupil activity will optimally promote the child's moulding in this respect?" In considering these issues, one will have to bear in mind the personal needs and abilities of the individual pupil(s), his future circumstances and the demands and requirements of society.

At school level the aim should be to bring personality traits into harmony rather than to specialise in the development of one or more traits. Hence the physical, affective, spiritual, social, cultural, aesthetic and intellectual development of gifted pupils should receive equal attention. The curriculum should therefore form a unit and attest to the fact that it is compiled for the child in his totality.

7.4.3 Specific provision for the actualisation and development of creative abilities

Creative ability is an important facet of giftedness and, like intellectual ability, can be nourished, fostered and strengthened. Curriculum development should consciously allow for this, for resourcefulness and the ability to produce original creations are important for improving the quality of life in a community. The following point is worth remembering:

Socially useful creativity demands the synergistic co-operation of the entire personality, including all physical mechanisms and modes of thought. *Affective and conative* dimensions are as important as the cognitive ones (Gallaway 1969: 241).

7.4.4 Fluidity and openness

Sawyer (1983: 65-69) writes:

"It is impossible to arrive at the correct conclusions if one starts off by thinking of education as something done to a child by a teacher ... Our concern is not expressed at the improvement of teaching methods, but at creating a better learning situation."

In meeting the educational needs of gifted pupils, one should guard against an excessively narrow interpretation of education as conscious intervention by an adult. The gifted child's potential contribution to the educative situation is greater than many educators are prepared to admit: " ... teachers, perhaps adults in general, do underestimate children's ability to be autonomous in their learning ... " (Bolsover 1983: 114-116).

Sawyer (1983: 65-69) also warns: "These considerations are particularly important when we are dealing with the gifted for in them the drive to develop in a particular way may be particularly strong, particularly tenacious, particularly inflexible." Hence these pupils are especially insistent on individualisation.

Openness presupposes a measure of tolerance which permits the pupil to proceed from a premise he accepts as his own along a - to him - consistent mental route to a conclusion or other outcome that follows inescapably from the antecedent.

Often there is conflict between the values of society and the gifted pupil's point of view - something the curriculum developer should allow for. Openness permits independent thought, encourages pupils to think for themselves, and compels them to be critical and creative in the alternatives they propose.

7.4.5 Compatibility with the existing framework and microlevel policy

The curriculum should take account of existing educational praxis in the RSA. It should be designed in such a way that it will be feasible at the implementation level - in the classroom. Gifted pupils are practical in their approach to learning. Extra work is not hailed with enthusiasm, but challenges are usually welcomed.

The following model (p. 209) is an adaptation of the encounter model and warrants consideration at the microlevel of curriculum development for gifted pupils within the current macrolevel situation.

7.4.6 Provision for extramural programmes

To cater optimally for the educational needs of gifted pupils, the curriculum developer will have to provide programmes for implementation both in the classroom and outside it. Enrichment programmes based on the subject curriculum should be supplemented by interdisciplinary programmes within the school context.

Because gifted pupils in the RSA are educated predominantly within the mainstream of ordinary schooling, provision should be made not only for individualisation within the classroom but specifically for extramural activities that cater for the special needs of intellectually gifted pupils.

By means of such supplementary programmes and stimulating activities the curriculum developer can ensure that proper provision is made for *every* child in his totality.

7.5 CURRICULUM DEVELOPMENT FOR EXTRACURRICULAR CENTRES FOR GIFTED PUPILS

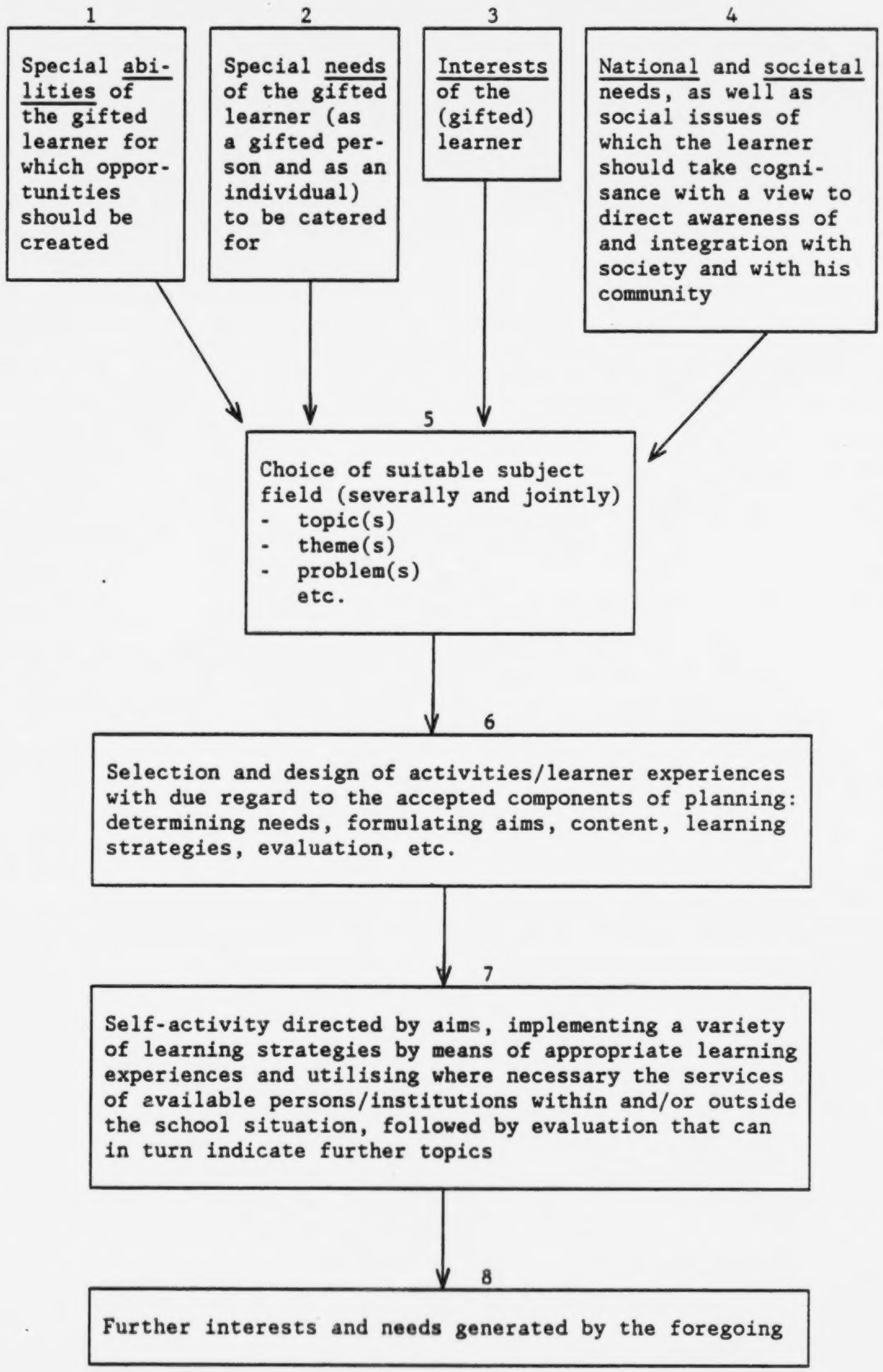
As the name suggests, an extracurricular centre functions outside the ordinary curriculum. Because of certain advantages it offers, this method of catering for the unique needs of gifted pupils has become standard practice with certain education departments, educational institutions and private agencies. For this reason a brief outline is given of curriculum development for extracurricular centres.

A curriculum for an extracurricular centre should observe all the requirements and principles outlined in the preceding paragraphs; but because it represents a second or additional curriculum, the following principles should apply in the design of programmes for such centres:

* Duplication of the school programme should be avoided.

* A thematological approach, although within recognised subjects or combinations of subjects, is preferable.

MICROLEVEL MODEL OF CURRICULUM DEVELOPMENT WITH THE ACCENT ON SELFACTIVITY


1
Special abilities of the gifted learner for which opportunities should be created
2
Special needs of the gifted learner (as a gifted person and as an individual) to be catered for
3
Interests of the (gifted) learner
4
National and societal needs, as well as social issues of which the learner should take cognisance with a view to direct awareness of and integration with society and with his community
5
Choice of suitable subject field (severally and jointly) - topic(s) - theme(s) - problem(s) etc.
6
Selection and design of activities/learner experiences with due regard to the accepted components of planning: determining needs, formulating aims, content, learning strategies, evaluation, etc.
7
Self-activity directed by aims, implementing a variety of learning strategies by means of appropriate learning experiences and utilising where necessary the services of available persons/institutions within and/or outside the school situation, followed by evaluation that can in turn indicate further topics
8
Further interests and needs generated by the foregoing

- The emphasis should be on the development of thought processes, problem solving and creativity; work requiring memorisation should be confined to a minimum.
- Individualisation and self-activity are essential.
- The tempo will be set by pupils' interests and distinctive needs, and each pupil should progress both independently and in a group context.
- Class groups should be small.
- Each activity should be goal directed without smothering initiative.
- Actual experience, future orientation and evaluation should receive due attention.

Subject specialists can be enlisted as lecturers for such enriching, accelerated extramural instruction geared to the syllabus. Curriculum developers should ensure that the subject matter is clearly and consciously correlated with the educational needs of gifted pupils, to ensure that the subject matter will become meaningful to gifted pupils.

Although not a prerequisite, it would serve a useful purpose if curriculum development for extracurricular centres for gifted pupils could be co-ordinated. A central curriculum development service* closely linked to the actual world, to commerce and industry and to tertiary education institutions ought to meet this need.

Differentiation at extracurricular centres should focus on optimising the chances of actualising the gifted pupil's exceptional abilities. This differentiation should be pedagogically sound and directed at the demands and needs of the individual pupil as well as those of society. It should be stressed that education at extracurricular centres should not be career oriented but should so stimulate the giftedness and mental functioning of the pupils at these centres that they will eventually possess cognitive and other skills that will benefit them in their subsequent studies and in their everyday lives.

7.6 CURRICULUM DEVELOPMENT FOR INDIVIDUAL GIFTED PUPILS

When speaking of individual pupils with special educational needs, it is accepted that these pupils have specific gifts that cannot be adequately stimulated by conventional education.

---

* See Par. 7.1.1, where reference is made to the government's decision concerning a central curriculum development service in its White Paper on the Provision of Education in the RSA.

Because of this individual distinctiveness, an individualised approach is essential to enable each child to develop his individual giftedness to the full. As the gifted pupil progresses in his school career, his individual giftedness in respect of intellectual capacity, aptitude and interests becomes more pronounced. This unique giftedness becomes increasingly specialised and makes great demands on the curriculum content.

The older the gifted pupil, the smaller will be the role played by his general giftedness and the more his specific giftedness will indicate his special educational needs. Thus giftedness leads to increasing individuality, greater actualisation of his specific interests and a growing need for a curriculum designed especially for him.

The actualisation of the pupil's giftedness will be determined by the opportunities offered him. The question here is more specifically how the programme developed for him is to form a basis for the actualisation and crystallisation of his giftedness. Hence the development of a curriculum for a specific pupil concerns the actualisation of his giftedness in the unique situation from which he must encounter reality in the course of actualising that giftedness. In designing this unique life world, his distinctive giftedness probes reality in such a way that it can only be actualised if he is accompanied by an expert.

7.7 RECOMMENDATIONS REGARDING CURRICULUM DEVELOPMENT FOR GIFTED PUPILS

7.7.1 A model for curriculum development

According to the White Paper on the Provision of Education in the Republic of South Africa, the government accepts the recommendation of the Interim Education Task Group concerning the establishment of a *central curriculum development service* for the RSA (see Par. 7.1.1). Since there can be no essential difference in the theory and practice of curriculum development for different categories of learners, such centralised curriculum development for gifted pupils is acceptable.

- It is recommended that the Work Committee: Education for highly gifted pupils should not express any views on a curriculum development model: such a model should be designed by the central curriculum development service itself.

7.7.2 Curriculum development on a national basis

The following factors were taken into consideration when formulating the work committee's recommendations in this regard:

- The small number of gifted pupils;

- the fact that there are varying numbers of such pupils in all schools throughout the country;

- the small number of teachers suitably qualified for instructing these pupils;

- the fact that pupils manifest their giftedness in diverse ways;
- the fact that teachers do not necessarily have the expertise to develop curricula for these pupils;
- the need to provide teachers with curricula that will ensure the effective education of gifted pupils.

In view of the foregoing it is recommended that

- curriculum development for gifted pupils should be the responsibility of the central curriculum development service;
- this central service, in consultation with experts from the educational authorities, should develop curricula for gifted pupils at primary and secondary school level on a national basis;
- curricula be developed to cater for the educational needs of the different categories of gifted pupils;
- the central curriculum development service and the experts assisting it should take into consideration the aims of and guidelines for curriculum development for subjects and groups of subjects in order to meet the educational needs of gifted pupils as set out in Chapter 8 of this report.

7.7.3 Further research

Different categories of gifted pupils are identified on the basis of the ways in which they manifest their giftedness. These manifestations indicate the educational needs of such pupils and determine the selection and organisation of learning content. It is therefore recommended that research on curriculum development for gifted pupils be continued.

7.8 CONCLUDING REMARKS

Curriculum development for gifted pupils is a topical issue and education reformers are forced to consider how curricula can be made sufficiently open and challenging to stimulate these exceptional pupils, both individually and as a group.

An attempt was made in this chapter to indicate that the possibilities are limitless and that curriculum developers can, without exorbitant financial implications, effect the necessary innovations in existing curricula in the RSA.

CHAPTER 8

GUIDELINES: CURRICULUM DESIGN FOR SUBJECTS, GROUPS OF SUBJECTS AND LEADERSHIP AS A SPECIFIC TALENT

8.1 INTRODUCTION

As indicated in Chapter 2 of this report, education for gifted pupils is provided by the education departments of the Transvaal, Cape and Natal. The Division of Indian Education, the Directorate of Coloured Education and the Department of Education and Training have only just embarked on this process.

It has also been indicated that programmes or curricula are designed in divergent ways.

The characteristics of gifted pupils as determined by an identification process (see Chapter 3) are indicative of the specific educational needs to be met by curricula and educational services. Curriculum design may be focussed on identified educational needs (such as Mathematics, Music or languages) or on exceptional personal qualities (such as leadership).

If successful curricula are to be developed for gifted pupils, it is essential that guidelines be laid down in respect of subjects, subject groups and exceptional personal qualities. In the section that follows, guidelines are presented for the development of curricula in the social sciences, languages, Mathematics, technical subjects, natural sciences, fine arts and economic sciences and also for the development of leadership.

8.2 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE SOCIAL SCIENCES FOR GIFTED PUPILS

8.2.1 Introduction

This chapter follows the broad principles laid down in Chapter 7 (on curriculum development for gifted pupils) by discussing basic guidelines for the development of curricula in the social sciences - mainly Environmental Studies, History and Geography, although subjects such as Anthropology, Sociology, Economics, Communication Sciences, Political Science and Philosophy may be included at a more advanced stage for the sake of integrating related subjects and actualising points of contact.

Since there is as yet no ideal national educational strategy for the education of gifted pupils, it is assumed that the guidelines in this report should apply to *individuals* and also to *groups* of gifted pupils with a special interest in the social sciences.

In terms of objectives and content, the social sciences are geared to promoting a better understanding of society and the world in which people live, an intelligent interpretation of political and world events, and a broader outlook on the contemporary world. These, *par excellence,* are the subjects that should be used to equip gifted children to become social and political leaders in the complex world of the future. Means to this end would be

* a general investigatory or research approach;

* group work for the cultivation and refinement of social skills and the development of leadership and organisational abilities;

* individual study;

* interaction with the community.

8.2.2 Aims as a component of subject curriculum design

Curriculum aims and lesson objectives for gifted pupils can be developed in terms of certain existing aims of the social sciences. While these are probably differently formulated in the subject syllabi of the various South African education departments, the following aims occur more or less universally from the grades (substandards) right through to Standard 10:

(i) To give the pupil a clearer idea of himself as an individual with needs and to inculcate appreciation for the life-styles of people, both in his own environment and in other parts of the country (Environmental Studies).

(ii) To help the pupil grasp the exact relation between man and his environment and to develop a concept of human life by encouraging him to

  * take an interest in the problems of his country;

  * take a sympathetic interest in other nations and their problems;

  * realise the interdependence of all the peoples of the world (Geography, senior primary).

(iii) To include a sense of history and of the interaction between cause and effect - a realisation that the present is a legacy of the past and the future is determined by the present, that a knowledge of the past is essential for an understanding of the present - and in this way to promote a better understanding of contemporary conditions and problems.

(iv) To inculcate in a systematic and sympathetic way an understanding of institutions, traditions, national customs, historical relics and achievements and all spiritual and cultural values of mankind, both past and present, and to respect and appreciate the legacy of past ages.

(v) To teach pupils that the welfare of a country is the responsibility of every citizen.

(vi) To help pupils understand that human life is meaningful, that they live in an ordered community, and that human actions are associated with responsibility (History, senior primary).

(vii) To study the political, social and economic events of the past in order to broaden the pupil's outlook on the modern world.

(viii) To deepen the pupil's insight so that political, social and economic affairs will have interest and significance for him.

(ix) To inculcate appreciation of certain fundamental values and ideals, such as justice and freedom, by studying people and nations over a long period of time.

(x) To stimulate the pupil's imagination and give him an opportunity to immerse himself in the ideas and events of the past.

(xi) To equip pupils to understand how the management of public affairs has evolved in their own country.

(xii) To familiarise pupils with the most important recent events and trends overseas and their influence on South Africa.

(xiii) To alert pupils to their privileges and duties as citizens of the Republic of South Africa.

(xiv) To develop to some extent the qualities and values that a study of history is intended to promote - for example a grasp of time and historical relativity, a critical approach to modern conditions and life-styles, the ability to express oneself clearly either in speech or in writing, tolerance and impartiality in judgements, and the ability to grasp the interaction between cause and effect (History, senior secondary).

Because the social sciences are oriented to human life, the curriculum designer will have to be even more sensitive than in other subjects to the social problems of the community for whom the curriculum is intended and to whose view of life it will have to be attuned.

A mere situational analysis of the abilities, educational needs and interests of the specific gifted learner will not suffice for the refining of these objectives. There will also have to be an analysis of the values, needs and demands of the community and of the country as a whole.

The social sciences are not directed only at the present and past but are strongly future oriented. Future projection will therefore be an important component both of the situational analysis and of the subject matter of these sciences. However, since such projections are subject to so many unpredictable variables, it may not be possible to set fixed goals for the curriculum. Both it and the presentation strategy will have to be open-ended to allow for constant adjustment and change.

240

8.2.3 Principles of curriculum development for the social sciences

In selecting a subject curriculum design, the needs of gifted pupils should be kept constantly in mind. The following principles are crucially important:

(i) To develop the basic skills commensurate with the capacity of the gifted pupil, the curriculum should

* develop research skills right from the lowest standards;

* develop the higher intellectual skills such as analysis, synthesis and evaluation;

* encourage divergent thinking;

* make optimal use of a variety of materials and human resources;

* allow for individual work and independent study;

* constantly evaluate pupil progress and the efficacy of the programme.

(ii) To inculcate confidence and self-esteem, the curriculum should

* encourage the pupil to work at an appropriate level of complexity;

* require that the pupil evaluate his own work;

* encourage the pupil to make an independent study of subjects that interest him;

* inculcate pride in work well done.

(iii) To assist the pupil in acquiring the knowledge and attitudes required for active participation in South African society, the following should be stimulated:

* Appreciation of the views of others;

* divergent, evaluative thinking;

* discussion of leadership and a knowledge of the great leaders of the past;

* an appreciation and understanding of the contribution of all population groups to South African culture.

(iv) To generate the necessary sensitivity, provision should be made for

* open discussion of problems;
* the encouragement of a sense of humour;
* opportunities to appreciate the aesthetic side of life.

The teacher's task of designing a social science programme for gifted pupils should be centred on the stimulation of

- creativity, but also commitment to task completion;
- freedom of thought, but also mental discipline;
- self-confidence, but also sensitivity to others.

The complexity of world problems makes it imperative for the survival of civilisation, to train gifted children as creative, productive members of society.

8.2.4 Teaching strategies or ways of dealing with pupils

In providing for the learning needs of gifted pupils, consideration should be given to the implementation of the curriculum - which teaching strategies or ways of dealing with pupils are most effective in the context of the social sciences. These should be consonant with current learning theories and the learning styles of gifted pupils. An eclectic approach, combining a selection of teaching strategies from the following range, could prove the most effective:

(1) Research

School research procedures are frequently restricted to hunting for information in libraries, whereas essential research skills and habits can be inculcated as early as Grade 1. Such procedures would include the efficient use of time, how to set about finding certain data, and how to read critically, take notes and remember facts. The earlier such skills are developed, the more proficient the child will become in the research field.

Among the research skills that can be learned at an early age are those concerned with data collection:

- *Dictionary skills* include the use of alphabetical order and key words, the interpretation of meaning, and correct spelling.

- *Reference skills* include the use of a book's introduction, table of contents, glossary and index, and how to find information in an encyclopedia.

- *Library skills* concern the type of information available from various sources, how it is organised, the use of card catalogues, journal indexes, microfilms and tapes.

- *Map-reading skills* include the interpretation of map symbols and what maps tell about life in various regions.

- *Graph and table skills* include the use of graphs and tables, how to read and compile them and how to make deductions from them.

Social science topics should be selected in a way that will permit the gifted pupil to use the above skills. Assignments should be so structured that he will be taught to think accurately, observe carefully, make logical inferences, solve problems, propose plans of action and compile a balanced report.

242

(2) Problem solving

Gifted pupils ought to be problem solvers and creative thinkers. Research, as discussed above, should therefore not be restricted to data collection. Gifted pupils should be taught to probe and resolve problem situations.

There are a variety of problem-solving models that can be used to good effect in teaching the social sciences to gifted pupils. Basically the gifted child should learn how to

* identify and define a problem,
* research a problem and collect relevant information,
* select a method or procedure for solving the problem,
* keep an open mind,
* consider a whole range of ideas (not shrinking from the unusual) and list the main features of the problem,
* weigh up opinions and facts,
* select the right solution from a range of possibilities.

(3) Group work

Although curriculum development for individual gifted pupils is a highly personal matter in many subject areas, the social sciences probably offer more opportunity for group work than any other discipline.

Confronting a group with a problem is a very common technique that can be used fruitfully with gifted pupils. Although the group need not be large, it frequently becomes possible to attain affective goals that are of the greatest importance to the maturation of the gifted child. Among other possibilities, it presents pupils with opportunities to

* improve their evaluative skills, arrange their evaluations and select the best evaluation;
* develop leadership skills;
* improve their organisational skills;
* meet deadlines for the completion of assignments;
* develop and exercise their sensitivity to other group members.

The familiar think-tank technique, frequently used in problem-solving models, does not come into its own except in a group situation. It generates ideas for subsequent evaluation and can produce creative solutions.

(4) Individual work

Pupils with a personal interest in a specialised field should be encouraged to research the field further and to design and plan their own research projects. A great deal of flexibility and scope for imagination should be allowed.

(5) Interaction with society

Vital information can be generated by introducing pupils to community leaders who are authorities in specific areas. This gives the children an opportunity to listen to and question someone who is enthusiastic about a subject in which they themselves are interested.

Other ways of integrating subjects and developing interpersonal relationships are visits to places of interest, the use of public libraries and museums, field studies, camping excursions and visits to other cities.

(6) A research model for the social sciences

Apart from the teaching strategies outlined in the previous five paragraphs, a few more are suggested by the literature, such as Hilda Taba's model, Joseph Renzulli's "Triad" model, models based on Bloom's taxonomy of teaching objectives, and other creative problem-solving models. All of these are more or less applicable to social science curricula and can be profitably used at the respective development levels of the various pupils.

A suitable social science model, covering most of the necessary skills and processes relevant to gifted pupils, is the Basic Inquiry Model of the Ontario Ministry of Education. It includes the following eight-step approach:

Step 1: An initial experience

Introductory, exploratory activities which may include newspaper reports, a film show, and general discussion.

Step 2: Stating the problem

Stating the question or problem on which the study will be based.

Step 3: Alternatives

Suggesting as many reasonable alternatives as possible to answer the question or solve the problem.

Step 4: Data collection

Collecting information in respect of each alternative.

Step 5: Synthesis

Deciding, in terms of the collected data, which alternative best resolves the problem.

Step 6: Evaluating the conclusion/solution

Checking whether the solution completely covers the original question or problem.

Step 7: Introducing the conclusion/solution

Deciding on the method to be used in explaining findings to other pupils.

Step 8: Evaluation

Evaluating the entire project on deciding whether the solution is appropriate to the original problem.

The teacher's main role in the implementation of such a model is that of guide and advisor. No answers should be suggested, but situations should be created and material provided to stimulate further questions.

Examples illustrating the implementation of the above model(s) in terms of programmes for gifted pupils are attached by way of an addendum.

8.2.5 Evaluation

Evaluation forms an integral part of the teaching-learning process. In the context of curriculum design it comprises two main areas: *programme evaluation* and *pupil progress evaluation*. The two areas cannot be assessed in isolation: programmes for gifted pupils that achieve no more than pupil enjoyment are not necessarily successful.

The main purpose of programme evaluation, in the social sciences as elsewhere, is to collect information, analyse it and decide how to upgrade the programme. The curriculum evaluation criteria as discussed in the basic guidelines for curriculum design are applicable to the social sciences also.

Programmes for gifted pupils characteristically promote more advanced levels of thinking, awareness, interest and affective behaviour. This creates problems for the evaluator: these traits cannot be evaluated as easily or precisely as knowledge or basic skills. A further problem is that highly individual objectives have to be set for each pupil, hence each product has to be assessed as unique.

In compiling a curriculum for gifted pupils, the point of departure is an initial evaluation of each pupil or group of pupils that will include not only the pupil's level of functioning but the full spectrum of a situational analysis. As instruction proceeds, there has to be ongoing process evaluation and also feedback, and the further course of the project has to be monitored. Finally there is a summative or product evaluation to determine the extent to which learning objectives have been achieved and what curriculum adjustments are considered necessary.

The final product or outcome evaluation in the social sciences ought to take account of the following factors:

(i) The acquisition of knowledge: It is more important to measure the depth of the pupil's knowledge, his clarity of comprehension and ability to handle concepts and ideas than merely to test what information he has learnt.

(ii) The acquisition of skills and working habits such as an ability to generalise; think abstractly and critically; make inferences from facts; collect, organise and interpret data; perceive trends, patterns and causal relationships; recognise, formulate and test hypotheses; plan independent studies; read with comprehension and discernment; and read and write in a clear and orderly way.

(iii) The development of values and attitudes (including an open mind, tolerance of different views, respect for the contributions of others, critical analysis of one's own prejudices and those of others in the solution of social problems, and appreciation of the values governing human relationships).

(iv) Participation in group interaction if the work is taking place in a group context.

8.2.6 Concluding remarks

The social sciences contain key subjects for gifted pupils, both on account of their potential as independent disciplines and in view of the valuable social benefits the study of such subjects can produce. While the RSA needs gifted natural scientists, it is equally important to devote the cream of its brainpower to the science of human relations and the study of man's interdependence with his environment.

8.3 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE VISUAL AND PERFORMING ARTS (ART, MUSIC AND BALLET) FOR GIFTED PUPILS

8.3.1 Aims and guidelines: designing art curricula for gifted pupils

(1) General aims

The aims as formulated in the art syllabi apply in extended form to gifted pupils as well. In designing art curricula for these pupils, the following aims should be considered:

(i) To provide for the enrichment of pupils' knowledge and experience in a particular field of art;

(ii) to promote knowledge of art through study of the work of artists and through study of the elements of art in nature and the built environment;

(iii) to extend pupils' experience of art by considering different artistic media and approaches;

(iv) to promote the personal enrichment of pupils by stressing qualities such as awareness, confidence, creativity and integrity;

(v) to give some insight into occupational possibilities in the art field.

While it is true that the gifted pupil may have a greater capacity for the higher cognitive activities, namely analysis, synthesis and evaluation, this does not mean that less gifted pupils will concern themselves only with factual knowledge. Art education stresses the ultimate need for all pupils to be able to evaluate their own work and the work of others.

(2) Specific aims

The curriculum for gifted pupils should encourage the development of the following skills and abilities: technical development, exploration, experimentation, innovation, imagination, expression, as well as discrimination, critical assessment, perception, evaluation, interpretation, analysis, verbal and non-verbal communication in order

(i) to expose the gifted child to the learning environment outside the school, e.g. the concert hall, museum, library and art gallery;

(ii) to broaden the gifted pupil's artistic vision;

(iii) to offer opportunities for the in-depth study of those particular areas in which the gifted pupil shows interest;

(iv) to interest the gifted pupil in a wider field of study and offer, if necessary, alternative fields of study to enable him to exercise his exceptional giftedness in other subject areas;

(v) to avoid isolating the gifted pupil from his peer group and to avoid creating a sense of elitism or superiority in him;

(vi) to incorporate essential skills, techniques and development into the in-depth study programme;

(vii) to be aware of the possibilities and dangers of an acceleration programme; to liaise continually with teachers working with the gifted child in other subjects regarding the assessment of the development of the child, the programme and the teacher's approach;

(viii) to develop in the gifted child the ability to cope with his giftedness, to relate to society and to contribute constructively to the community;

(ix) to develop initiative and independent activity in the performing arts and to emphasise emotional and intellectual expression - a passive learning process is valueless;

(x) to create a programme that provides opportunities of aesthetic education.

(3) Teaching strategies

The first step is to examine the means used to determine the giftedness of the pupil and the exact nature of this giftedness. Evidence of creative talent can be obtained in many ways:

(i) Possession of advanced skills, imaginative insight and intense interest and involvement;

(ii) the judgement of teachers, administrators and supervisors who are familiar with the demonstrated and/or potential abilities of the individual;

(iii) the judgement of specialised teachers (art, music and ballet teachers), and of experts in the arts who are qualified to evaluate the pupil's demonstrated and/or potential talent.

A programme for gifted pupils can be effective only if it is in the hands of a teacher with the necessary temperament, creativity and intellect. The very nature of teaching/guiding gifted pupils demands that the teachers attend all workshops run for those involved with such pupils.

The following guidelines should be taken into account when teaching strategies for gifted pupils are planned:

(i) A gifted pupil *does not* necessarily require or will not necessarily respond to a study programme for gifted pupils. Forcing him into such a programme could cause grave psychological problems. Involvement should ALWAYS be voluntary on the child's part.

(ii) Creativity and innovation should not be restricted by the imposition of a rigid curriculum on either the pupil or the teacher. The teacher should use his imagination in designing a programme suited to the specific needs of the gifted pupil.

(iii) In the creative arts the interaction between teacher and pupil is vital. The teacher should display sensitivity regarding human relationships that can be explored and expressed in terms of the different subject fields in the performing arts.

(iv) The teacher should take the overall direction of the in-depth study programme into consideration, thus ensuring continuity and growth during the pupil's entire school career.

(v) The teacher should create a physical environment that is pleasant, attractive, dynamic and visually stimulating.

(vi) The teacher should establish a psychological climate of warmth and non-judgmental acceptance that aims at positive, supportive evaluation of all sincerely motivated forms of expression.

(vii) The pupil should be involved in the drawing up of the in-depth study programme, in its implementation and in its evaluation. The study programme should be implemented only for the benefit of the pupil, not to alleviate the frustrations of the teacher.

(viii) The pupil should develop confidence in and experience of the initiation, performance and completion of his programme.

(ix) The personal aptitudes, skills and preferences of the pupil should be at the core of the in-depth study programme, but the pupil should also be aware of his particular field of interest in the context of a wide range of ideas, experience and processes.

(x) Research and documentation should be encouraged by practical and theoretical projects. New documentation media such as tape recordings, electronic techniques, computers, video recordings, films and photography should be recognised and encouraged.

(xi) The pupil should be encouraged to contact professional people who are actively engaged in die field in which he is interested.

(xii) It should be borne in mind that, whatever the giftedness of the pupil, he will be required to write the usual final school examinations.

(4) Curriculum design procedure for individual gifted pupils

The procedure for drawing up a curriculum with the help of the gifted pupil could be as follows:

(i) Think about the direction; establish the visual/contextual/conceptual problems posed by challenges; research and investigate various approaches and experiment with various methods and techniques.

(ii) Devise and undertake a project that incorporates the preferred approach. Evaluate the results - personal and developmental.

(iii) Generalise the solutions - apply the project to other fields.

(iv) In evaluating a project it is useful to ascertain which cognitive processes the pupils will have to use. According to Bloom's taxonomy, knowledge of facts scores lowest, followed progressively by understanding, application, analysis, synthesis and most important, evaluation.

(v) It should however be borne in mind that fundamental to the art process are intuition, the discovery of problems while working, and the unexpected solution provided by the unconventional approach of the truly gifted person. The whole process of creative thinking is fluid, can be subjective, does not always respond to structured, predetermined programmes, but constantly seeks and explores new avenues and fresh possibilities.

(5) Suitable topics for programmes

Any project that fulfils the above requirements, is open-ended and oriented towards the child rather than a preconceived result, will be suitable. In practical classes and examinations this usually presents no problem. Even traditional topics such as the still life which are normally set by the teacher and painted by the pupils in a late 19th century style, can become a vehicle for personal growth if the aims and objectives of the exercise are discussed beforehand with the group, the subject matter selected after consultation, and the approaches geared to the needs of individual pupils. Theory classes have a more structured syllabus but here the stress should be away from facts and dates and names *per se* towards a greater use of facts to illustrate concepts. The fields of aesthetics, art criticism and evaluation should be relevant not only to the distant or recent past, but also to the work of contemporary artists and peers. Realistic projects such as submitting pupils' comments on exhibitions, films or conservation topics to newspaper columnists or magazines should be undertaken.

(6) Evaluation of the success of projects and gifted pupils' work

A project can be regarded as successful if the general and specific aims of the project are achieved. One can consider the following points:

(i) What was the level of pupil involvement? Did the gifted pupil participate throughout the planning and execution of the project without a loss of momentum or commitment?

(ii) What was the gifted pupil's evaluation of the project as well as of his own success in the project? Gifted pupils should be encouraged to write their evaluations rather than make verbal comments. Headings should be provided such as : How did you rate your performance - in relation to the class, in relation to yourself? What did you learn about art criticism and art culture from the project?

(iii) Did the gifted pupil learn concepts that could be applied to his subjects or areas of giftedness?

(iv) While a gifted pupil can be expected to make a productive response to a project, his cognitive growth should also be considered. He may have responded in a dramatic, musical or poetic way and thus his other subjects may have benefited more than his art.

(v) While evaluation, either in the group, by the group or indivually, continues all the time, the gifted pupil and the teacher should also submit to the normal school processes of testing and grading. The full range of testing (especially in theory classes), from non-verbal instruments to open-book examinations, should be examined for its suitability for and relevance to that particular unit of study.

8.3.2 Aims and guidelines: designing music curricula for gifted pupils

(1) General aims

Teachers should refer to the general aims as set out in the existing syllabi.

(2) **Specific aims**

These aims are set in the light of the potential of gifted pupils based on a study of their characteristics and abilities in a variety of fields related to music and to educational activities in general. They include an extension and a broadening of subject knowledge, including the following:

(a) **Practical performance**: This implies

(i) the development of a superior technique and the study of an appropriate repertoire, leading to a high standard of concert performance;

(ii) the analysis of musical works in preparation for and with a view to performance;

(iii) a comparative study of recorded performances (both contemporary and historical) with a view to noting performance praxis through the years;

(iv) listening to recordings with a view to studying the sheet music of instrumental, vocal and orchestral works;

(v) experience in ensemble playing, with the analysis of musical works as mentioned in 2;

(vi) concert attendance preceded by research and followed by critical discussion;

(vii) periodic attendance of master classes at a nearby university.

(b) **Harmony**: This implies

(i) advanced studies of traditional harmony above and beyond the requirements of the existing syllabi;

(ii) an historic overview of harmonic praxis through the ages, including 20th century techniques and the analysis of appropriate works;

(iii) knowledge of keyboard harmony praxis leading to the study of improvisation techniques and jazz idiom. (This need not be restricted to keyboard players only, but should be made possible for those learning other instruments as well.)

(c) **Composition**: This implies

(i) the application of music theory by composing and evaluating music in the various idioms as well as the evaluation of musical performances;

(ii) the submission of musical works to a university (e.g. UNISA) for its annual competition or to eisteddfods.

(d) **Organisational experience in the music field**: This could include:

- (i) running a music club;
- (ii) assisting with the coaching of a choral group or instrumental ensemble;
- (iii) producing an operetta or musical.

(e) **Conducting**: This implies studying the art of conducting and applying the theory of conducting in practice by conducting an orchestra. (Provision should be made for opportunities to practise conducting.)

(f) **A study of the history of music**: This implies study

- (i) to broaden understanding of the interrelationship of the arts within the broad cultural stream, including a study of the music of other cultures and its influence on Western music;
- (ii) to provide a sound background for the critical study and evaluation of specific works and performances (see 8.2.2(a)).

(3) **Teaching strategies**

The normal procedures should be followed. The greatest possible degree of individualisation should be allowed, bearing in mind the individual abilities and needs of the pupils. The following teaching strategies could be implemented:

(a) **Discussions**

- (i) Musically gifted pupils should discuss specific musical compositions or the pupil's own compositions or performances. (Tape recordings of pupil's performances could be used.)
- (ii) A gifted pupil should discuss topics related to any of the components studied, either with the teacher or with other pupils or with persons who are experts in a particular field (composer, performer or conductor). It would be useful in the latter cases to base the interview on a structured scheme drawn up in advance by the pupil and the teacher. Such interviews should be followed up by at least one report-back session.
- (iii) Attendance at concerts should be preceded by a study of the works to be performed. Pupils should be required to write a criticism afterwards, which could be submitted to the music critic of a newspaper for evaluation;
- (iv) Attendance at rehearsals of choirs and orchestras as an observer, with a score of the works being rehearsed. This should be followed by a report-back session and discussion.

(b) **The study of scores with the help of recordings**

The study of scores with the help of recordings could be done by individual pupils or by a group of pupils. Such studies should be followed up by at least one report-back session.

(4) **Examples of suitable topics for programmes**

The study of specific works by 20th century composers. This should encompass the study of various creative techniques and performances. (Structured discussion should precede all studies, but should be flexible and not restrictive for the pupils.)

(5) **Evaluation**

(a) All the work done by musically gifted pupils should be evaluated in respect of pupil performance and achievement.

The degree of excellence attained should be indicated, not merely by awarding a mark but in the form of a discussion, indicating

* the criteria applied;
* the extent to which the pupil met each of the criteria;
* possible matters that should be studied in order to remedy weaknesses. (Self-evaluation by the pupils should be encouraged.)

(b) All the work done by musically gifted pupils should be evaluated in respect of the suitability of the assignment for the purpose intended. Matters such as the following should be considered:

* The extent to which the original objectives of the assignment were met;

* whether pupils' interests and involvement were maintained;

* whether the assignment was worthwhile, and whether it extended pupils' knowledge, developed competence in some field, or deepened understanding and insight;

* whether pupils developed the various characteristics of giftedness such as independent study skills, organisational abilities, problem solving, application of principles, analytical and creative skills.

8.3.3 Concluding remarks

Designing a curriculum for musically gifted pupils requires the determining of specific aims to meet the educational needs of gifted pupils and the provision of teaching strategies to enable such pupils to develop their specific abilities.

8.4 AIMS AND GUIDELINES: CURRICULUM DESIGN IN MATHEMATICS FOR GIFTED PUPILS

8.4.1 Introduction

Making provision for the education of the small percentage (less than 5) of mathematically gifted pupils is considered of paramount importance for the self-actualisation of the individuals concerned as well as for the scientific development of most industrialised countries (Straker p. 13). Manpower surveys in die USA, for example, show that only half of the top 25 % of high school graduates obtain college diplomas and that less than 10 % of those capable of obtaining doctorates actually do so (Behr p. 59). Also, notwithstanding all the efforts made to foster special education for gifted pupils in the USA, the amount spent per annum (in 1979) on special educational provision for each gifted child was one-fourhundredth of that spent on each learning disabled child (Behr p. 59).

Nowadays countries are more aware of the special educational needs of gifted pupils. With the growing technological orientation of our society there is an increasing need for leadership in Mathematics and Science. This is not to say that nothing has been done for these individuals: there are the national mathematics olympiads, provincial provision of supplementary mathematics, local contests often organised by teachers' societies and extramural activities such as computer and chess clubs. Nevertheless the above type of provision does not provide for *all* of the following:

* An opportunity for the individual to use his particular abilities.
* An opportunity to learn in preferred ways.
* The provision of learning tasks that are challenging.
* The elimination of learning that is not effective enough.
* Emphasis on process rather than computation and content.

The last point warrants further comment. The processing of mathematical information depends on logical thought in the sphere of qualitative and spatial relationships, number and letter symbols. It also requires rapid and broad generalisation of mathematical objects, relations and operations, and at the same time a flexibility and fluidity of mental processes in mathematical activity. The mathematical process is exemplified by a striving for clarity, simplicity, economy and rationality of thought and, in turn, solutions. There must be an ability to reconstruct rapidly and freely the direction of a mental process, switching easily from a direct to a reverse or converse train of thought. The above is often combined with an original approach to problems and a tendency to think abstractly (Heid pp. 222-224). Krutetskii coined a phrase for the above process, namely a *mathematical cast of mind* (Krutetskii pp. 350-351).

Mathematically gifted pupils obtain their mathematical information from a sound grasp of the formal structure of a problem, insight in respect of the identification of relevant mathematical relationships and a spontaneous formulation of relevant mathematical process leads to generalisations that become part of the mathematical frame of reference of gifted pupils (Krutetskii pp. 254-314 and Heid pp. 221-225).

The above description of the cognitive needs of mathematically gifted pupils and the mathematical process provides a foundation for the design and development of extension programmes. It is, however, essential first of all to modify Bloom's Taxonomy in Cognitive Domain as follows:

TABLE 1

Original taxonomy	Modified taxonomy for mathematics education	Application
Knowledge Comprehension Application Analysis Synthesis Evaluation	Knowledge Skills Comprehension Application Analysis Synthesis Generalisation	Extension programming

8.4.2 Guidelines: curriculum design for mathematically gifted pupils

The following guidelines should be borne in mind when designing a curriculum (Borenson p. 238):

(i) Work according to analysis, synthesis and generalisation level of Bloom's taxonomy wherever possible (see Table 1).

(ii) Concentrate on *mathematical structures* and, where possible, adapt the mathematics to the pupil's needs.

(iii) Encourage independent, creative thinking and be prepared to modify the programme accordingly.

(iv) Provide opportunities for inductive as well as deductive reasoning.

(v) Encourage co-operation within small groups and the sharing of ideas, both verbally and written.

(vi) Provide, where possible, open-ended, creative, process-oriented situations that are challenging to the pupil and stimulating for the teacher.

(vii) Allow for early abstraction.

(viii) Enhance the pupil's awareness of the necessity for a clear, concise and accurate statement of propositions, assumptions and results.

(ix) Allow the pupil to experience the slow and deliberate process of developing and formulating a mathematical structure.

(x) Help the pupil to become aware of the frustrations and pleasure inherent in doing research. Encourage him to pursue research on his own.

(xi) Give the pupil the opportunity to develop his own mathematical methods and encourage the finding of elegant solutions.

At this point the problem confronting us is twofold: firstly to determine the type of curriculum that will meet the educational needs of mathematically gifted pupils and, secondly, to identify these pupils, especially from an early age. To help resolve these problems, the following points should also be borne in mind when designing a curriculum for mathematically gifted pupils:

- The learning characteristics and modes of thinking of these pupils (see later).
- The low profile that computational skills play in the thinking of mathematically gifted pupils.
- Opportunities are required for these pupils to systematically develop, practise and refine their thinking skills.
- The adaptation of the mathematics curriculum in terms of breadth and depth. The content of the enrichment programme should develop greater insight and understanding and offer intellectual challenges that harness the potential of the pupils.

8.4.3 Teaching strategies

Enrichment can also be achieved by means of the following (Straker pp. 57-71):

(i) Visits to museums, technikons, universities and commercial and industrial institutions.

(ii) Mathematics clubs.

(iii) A mathematics week in the primary school.

(iv) Producing a school mathematics magazine or incorporating a mathematics section in the existing magazine.

(v) Regular mathematical exhibitions.

(vi) Computer instruction for gifted pupils.

The use of the computer should obviously not be restricted to mathematically gifted pupils. Computers provide scope for many forms of giftedness. Nevertheless mathematically gifted pupils should learn to programme with ease and be capable of finding solutions to quite complex mathematical problems or puzzles.

The computer language "logo" is particularly useful for mathematically gifted pupils because of its geometric properties. It is best introduced at the primary school level. It is essential that mathematical problems that can be solved with computers should fulfil the same criteria as any other mathematics enrichment programme. They must for example, be discovery and problem oriented (Koetke pp. 270-271) and Straker pp. 40-42). In the same way enrichment work with the help of calculators is appropriate at junior primary level.

(vii) Mathematics puzzles and logic puzzles

Mathematics puzzles and/or logic puzzles and games such as NIM play an important part in any enrichment programme because their solution methods invariably reflect the mathematics process mentioned earlier (Straker pp. 43-53). They present a natural challenge to the mathematical mind and can provide a pleasant break in an enrichment programme. The puzzles can range from the mathematically inductive to those requiring simple deductive logic.

8.4.4 Evaluation of work done

Evaluation should be an ongoing process in order to modify the programme to meet the needs of the pupils. The success of the programme should be measured against the extent to which the guidelines listed earlier have been implemented.

Programmes such as the above should provide challenges and enrichment in the standards up to and including the third school phase. By the time the fourth phase is reached, it is essential to provide an acceleration programme. This can best be done by completing the Senior Certificate Mathematics in Standards 8 and 9 and then embarking upon UNISA's Mathematics I or one of the other courses, depending on the individual's interests.

8.5 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE TECHNICAL SCIENCES FOR GIFTED PUPILS

8.5.1 Introduction

Phenomenal technological advances and contemporary demands on pupils pose the problem of how to create interest, including broad public interest in gifted pupils. How can gifted pupils be trained to cope with the technological demands of the future?

8.5.2 Aims as a component of curriculum design for the technical sciences

Curriculum aims for gifted pupils can be developed in terms of the established aims of technical subjects. However, the following goals should also be kept in mind when designing such curricula for gifted pupils:

(i) The curriculum content should generate pupil interest in the technical sciences.

(ii) The selected subject matter should be interesting, valuable and useful and should create a permanent background that will enrich the lives and promote further studies of gifted pupils.

(iii) The curriculum should at all times make provision for creative action and initiative.

(iv) The curriculum should represent the needs both of society and of the gifted pupils themselves.

(v) Scientific explanations should be linked to phenomena in the technological world.

(vi) Guidance should be given in respect of the "language" of technology: definitions, user codes, symbols, laws and the like.

(vii) The curriculum should feature the scientific method, with the emphasis on observation, measurement, classification, prediction, deduction, communication, formulation of hypotheses, checking of variables, and experimentation.

(viii) The curriculum should feature the application of technological principles.

(ix) The curriculum should create a proper perspective on related issues.

(x) The curriculum should promote clear thinking, precision, accuracy and the ability to make logical deductions.

(xi) The curriculum should develop the ability of gifted pupils to apply technological knowledge in the everyday world.

8.5.3 Guidelines: curriculum design for the technical sciences

The educational needs of gifted pupils have to be borne in mind in selecting subject curriculum topics. The following are crucial principles:

(i) Basic skills need to be developed, and therefore the curriculum should provide for

* the development of research skills;
* the development of the higher intellectual skills such as analysis, synthesis and evaluation;
* the encouragement of divergent thinking;
* individual work and independent study;
* progress evaluation.

(ii) In order to promote self-confidence, the curriculum should

* encourage gifted pupils to work at an appropriate level of complexity;

* present opportunities for pupils to follow their personal interests;

* cultivate a pride in thorough work.

(iii) The curriculum should promote leadership abilities by way of group work.

(iv) Gifted pupils should be given opportunities to express their creativity.

(v) The curriculum should promote the kind of self-confidence that will enable gifted pupils to handle sophisticated machinery in a disciplined way.

(vi) The curriculum should establish a close link between practice, trade, industry and tertiary institutions.

8.5.4 Teaching strategies

(1) Enrichment of technical studies

According to an interdepartmental resolution, the technical subject Civil, Mechanical and Electrical Technics have been made higher grade subjects in the RSA. Because these subjects are applied disciplines with the emphasis on experimentation, this resolution affords the gifted pupil an opportunity for self-expression in design and technology.

Higher grade technics make it possible to group together in the senior secondary phases those gifted pupils whose aptitudes and abilities enable them to master the subject matter so that they can undergo abstract, theoretical training.

The curriculum content should be sufficiently close to the gifted pupil's level of development in respect of knowledge and skills. The link could be established through enrichment.

(2) Practice-integrated teaching

The aim of the subject Technical Drawing is to inculcate insight into certain standard procedures and techniques that are basic requirements for engineers, architects and industrial technicians. The basic requirements of engineering, architecture and industry are also taught in practical classes by means of special projects. All this enables gifted pupils to develop their creativity and actualise their potential optimally.

8.5.5 Concluding remarks

The shortage of technological manpower in the RSA makes it imperative to design a curriculum for the technical sciences which will cater for gifted pupils. These pupils should be afforded an opportunity to work independently and to optimise their creative thinking, skills and capacity for identifying and solving problems.

8.6 AIMS AND GUIDELINES: LANGUAGE CURRICULUM DESIGN FOR GIFTED PUPILS

8.6.1 The specific characteristics of gifted linguists

Language is fundamental to the development of the child since it is intimately related to his whole intellectual, emotional, social, moral and spiritual growth. A child's language, therefore, cannot be seen as something separate from him, and the more developed his language ability, the greater will be his ability to understand both himself and others, to arrange his experience, to structure his ideas, to regulate his behaviour and to take his place in society as an aware and compassionate individual.

It should be reiterated, when defining the talents of this group of gifted pupils, that some of the ablest children in any group will, for various reasons, not have achieved their full language potential. It is thus often necessary to look for underlying abilities rather than attainment, and to respond with understanding to the child who displays a passionate interest in some aspect of a topic when his imagination is fired.

Language fluency is one of a cluster of traits, such as the ability to refine ideas, to express abstract concepts and to arrive at generalisations, that frequently marks this group. Wallace (6) remarks that these pupils tend to be more mature mentally than other children. If their gifts are nurtured, the communication gap is widened still further. In such cases the teacher needs to be aware of the social issues involved and to help all the pupils to cope with them effectively.

An extensive vocabulary is a noticeable characteristic of gifted linguists. Such children delight in the colour and texture of words, are capable of creating original images, choose expressions with care, and respond to the music and rhythms of language. This is borne out by the research of Guilford, Scheuerle and Shonbrun (19), who state further that these pupils can also be identified by the number and the variety of questions that they ask.

Advanced reading ability is a recognised sign of giftedness. Terman (20), Miles (21), Abraham (22) and Witty (23) emphasise the central importance of reading for gifted pupils. Terman found that one-third to one-half of these pupils had begun reading before going to school. Gifted pupils read more intensively and their interests are wider than those of average pupils. They tend to read more non-fiction than fiction, and at a far more complex level than average pupils. Nevertheless all the researchers indicate a need for guidance and direction if the potential of these pupils is to be realised.

Vivid imaginations enable these pupils to create striking images and complex fantasies. This can be seen in the writing, in the enthralled response to stories and their ability to identify with the characters. The writing of prose and poetry can also indicate giftedness, though many pupils need to be helped to refine and control this gift. Story telling is another activity in which these pupils delight. Their tales are often graphic, detailed and full of vivid and original ideas. This imaginative response may also be expressed in concrete form through the medium of child drama, mime, speech or acting.

Torrance (18) suggests that gifted pupils have an unusual ability to explore alternatives. Since the present world is changing so rapidly, there is a great need for future leaders to be able to foresee problems and to find ways to alleviate them. Gifted linguists with their flexible imaginations and talent for creative problem solving, should be encouraged to find in fiction and in publications on philosophy deep and perceptive responses to problem situations.

Cognitive skills, which depend on language for their development, may be very advanced in these pupils who show the ability to use skills such as classifying, predicting, inferring, hypothesising and generalising. For this reason curriculum developers such as Jerome Bruner (24 and 25) are attempting to individualise learning, since the slow pace needed by the majority of the pupils may be agonising to gifted pupils.

Conceptual development is also closely linked to language ability and forms part of the mental structure required for the process of generalising. Nevertheless without a systematic and planned curriculum, gaps can be left in even the brightest pupil's concept hierarchy. It is thus essential that concepts are not left to emerge incidentally, but that they are developed parallel to the complex thinking skills, and to the knowledge and attitudes they are intended to enhance.

The social and emotional development of gifted pupils is often above average. A sensitivity to language enables them to respond more perceptively to the emotions and aspirations of others, both in fiction and in real life. They can be helped to identify with those from different cultures or with others who hold different viewpoints. It is also possible for them to learn to avoid stereotyping as a means of classifying individuals, to be less prejudiced and to appreciate a balanced response.

8.6.2 Aims for a language curriculum design for gifted pupils

(1) General aims

In designing a language curriculum for gifted pupils, the following general aims should be considered:

(i) To ensure that the general aims of education are met in language teaching.

(ii) To provide a classroom environment that stimulates the natural enthusiasm, vitality and spontaneity of each pupil through active participation in meaningful language activities.

(iii) To enrich the pupil's ideas; to make him aware of his thoughts and feelings; to create an awareness that others, similarly, have needs and desires, so that with a deepened understanding of himself and the world around him he may live more fully, more consciously and more responsibly.

(iv) To develop the pupil's ability to express his ideas, thoughts and feelings effectively through language.

(v) To develop the language skills that contribute to effective expression and communication.

(vi) To encourage delight in the depth and variety of literature and poetry for children; to develop the pupil's ability to read with pleasure, understanding and discrimination, and to extend his understanding of himself and his world.

(vii) To awaken the creativity that is inherent in all children. To make them aware of the power of striking images, rhythms, colour, sound and movement, and to encourage them to formalise their vivid style of perceiving the world in some form of original expression.

(2) Some considerations with regard to the development of a language curriculum for gifted pupils

(a) The progressive nature of language growth

When considering a programme for gifted pupils, one needs to consider whether there are any real differences in the aims, skills required, content and methods in the various phases of education. Modern research tends to suggest that this is not in fact the case. There is a difference in the complexity of the study of literature of a junior primary pupil and a matriculant, but the essential nature of the activity is identical. Jerome Bruner (24, 25) states that it is possible to teach any pupil in an intellectually satisfying form anything that is "worth an adult's knowing", as long as teachers have the courtesy to offer the material in a form simple enough for the child to understand. He says:

> "Experience over the past decade points to the fact that our schools may be wasting precious years by postponing the teaching of many subjects on the grounds that they are too difficult. The essential point overlooked in the planning of curricula is that the basic ideas that lie at the heart of all sciences and mathematics, and the basic schemes that give form to life and literature are powerful and vigorous."

Bruner thus suggests a "spiral curriculum development model" in which provision is made for central concepts and forms of increasing complexity. A curriculum, as it develops, should present these basic structures repeatedly, building upon them " ... until the child has grasped the full formal apparatus that goes with them". Bruner says that a spiral curriculum development model should be based on the following principles:

- The central concepts of knowledge should be translated into activities within the capabilities of gifted pupils.
- The systematic re-introduction of these concepts should enable gifted pupils to develop increasingly powerful mental strategies.
- These objectives are best achieved by the *active* involvement of gifted pupils in discovering and in generating their own concepts.
- The three ways of representing reality (through action, through a picture or image, and through a symbolic medium such as language) should all be developed by education.

The work of Bruner and others has compelled educators to reassess what children are able to learn at various ages. Gifted pupils, particularly, attempt tasks that seem too difficult for them. Torrance (18) declares that many gifted pupils " ... have developed the ability to cope with failure and frustration". He feels that were this not so, many of the great advances in the world would not have occurred. For these reasons a language curriculum should not be too rigid. Teachers need to be trained to guide each pupil to develop as far as his individual potential will permit.

(b) Productive language learning

(i) The total sequence of learning activities should provide for the realization of the following: basic knowledge, thinking skills, conceptual growth, the development of attitudes, feelings and values.

(ii) Productive learning activities should contribute to the achievement of more than one objective and should be handled so as to facilitate the transfer of skills and knowledge to other areas of the curriculum. For example, a gifted pupil should not deal with content alone, but should simultaneously reinforce his thinking skills. A continuous effort to apply the known to new areas, to predict and to hypothesise will develop learning habits that will have lasting value.

(iii) To be fully productive, learning should be incremental. As the gifted pupil progresses through the curriculum, he should be able not only to deal with new subject matter but to think more efficiently and to perform those skills that will assist him in his intellectual tasks. For example, it is important that pupils should extend their capacity to make distinctions, and also their ability to synthesise a greater variety of ideas. Such development should characterise all lines of growth - knowledge, thoughts, attitudes, feelings and values. Each step in learning should demand more than the preceding one. Each addition should be sufficiently beyond what the pupils can do at a given time to challenge them, yet not so far beyond their current skills as to render them incapable of bridging the gap.

(iv) Learning activities should not present gifted pupils only with logical and sequential ideas, but should also challenge them with cognitive dissonances. This means they should encounter concepts that do not fit into their existing conceptual sytems, so that they have to reorganise their thoughts or add a new dimension to what has already been learned.

(v) In order to develop independent thoughts, gifted pupils need opportunities to organise their own conceptual systems and to develop their skills for the independent processing of information. Consequently the nature and the organisation of learning activities should be calculated to encourage the learner to enquire, to do his own thinking, to develop his own ways of working out problems, and to try out and to evaluate his own ideas. Despite the temptation to provide the answers and solutions, the teacher should allow the learner to come to grips with the learning process, even though the product may be less refined than the teacher would wish. The point here is that even though imposed ideas may look more tidy, they are less likely to fit into a child's conceptual system than those he has thought through himself.

(vi) It is imperative to recognise that gifted pupils learn in a multitude of ways. They need opportunities to learn from books, from observation, from analysis, and from discussion and reflection. Since we know little about diagnosing optimal ways of learning for different individuals, the activities should provide for variety in both process and subject matter so that no individual is deprived either of his only possible way of learning or of his best way of learning.

(vii) In general, far more time seems to be spent in classrooms on activities that provide for intake, organisation and interpretation of content than on the expressive activities such as making murals or acting. Although easily overlooked, the expressive activities, which require application or utilisation of knowledge, are often the very activities that guarantee internalisation of learning and the productive use of learning as opposed to mere stockpiling of information.

(viii) If every learning activity is open-ended in the sense that it not only permits but also encourages responses and activities (which differ in depth, in the content of the response, and in the way of thinking), the freedom and flexibility of the curriculum is increased. For example, comparisons can be made on several levels of abstraction and sophistication. If learning activities are open-ended, they can accommodate different levels of ability, of experience, and of background among pupils in a classroom. Pupils should also be taught to deal with questions where there are no absolute answers. Divergent responses and hypotheses are very valuable for training flexibility of thought.

(ix) Gifted pupils should not be taught to solve actual problems only: they also require the motivation of having a real audience and of creating something of value for the wider society. They should therefore run class newspapers, take part in drama groups, be helped to find publishers for their poetry and stories, take part in debates with other schools, participate in language festivals, and so on. Only then will the intense striving necessary for success seem worthwhile.

(x) It is quite wrong to believe that gifted pupils do not need to be taught. If they are to climb the high peaks of excellence, they must be provided with skills whenever these are required. Moreover, any educational endeavour is more effective in the context of a relationship. The best education demands partnership - a travelling together of teacher and child - for education is rooted in meaning, and even for the most gifted of pupils, personal meaning grows in a context of interaction. (Adapted from Hilda Taba (33).)

(c) The need to develop concepts and skills

In the past the main reason for studying many school subjects was to enable the pupil to acquire facts, and any evaluation tended to stress the regurgitation of the same information. However, research over the past two decades has brought about a dramatic change in emphasis. The accumulation of data is no longer considered the top priority: a number of other goals have been accorded greater importance; such as helping the child to grow in understanding, and to develop the concepts, study skills and high-order thinking abilities required by later education. Such goals are of particular importance to the linguistically gifted pupil, for without the necessary concepts and skills he will be imprisoned in his own ignorance.

(i) The development of concepts

The question is how to enhance conceptual growth and to decide which concepts should be emphasised as central to a number of school disciplines. Jerome Bruner (24) argues that instruction should be focused on key concepts. He uses this metaphor advisedly as he sees such concepts, as opening doors to the understanding of the major disciplines and facilitating further learning, for example change is seen as being a key concept in History, Social Education, Science, literature, Geography, languages and moral growth. In every specialist area, however, there will be key concepts unique to each subject. Inseparable from the idea of key concepts is the idea of a spiral curriculum. By this Bruner means that children will first encounter key concepts in early childhood, and will have to deal with them in more highly developed forms as they progress through school.

There remains the very difficult matter of the choice of key concepts both within and across the disciplines. Bruner suggests that the key concepts unique to each discipline can be selected only by subject specialists who are able to tell what really is central to an understanding of each subject. It is certainly not adequate to include only those concepts for which individual teachers feel a certain enthusiasm. Moreover, there must be agreement between subject disciplines as to what concepts should be explored in common, and what level of understanding children in each class should have.

There are a variety of ways in which concept development can be enhanced. With very young gifted children, one of the first steps is to list the attributes of the concept. If, for example, we wish to introduce them to the concept "culture", we need first to decide ourselves what the characteristics of culture are. We would undoubtedly settle on terms such as values, beliefs, tools, economics, and so on. This kind of language would be far too difficult for pupils of this age but, remembering Bruner's dictum that the simplification of all knowledge is possible, we could use what Bruner calls verbal mediators for these concepts. Thus, instead of "culture", we could say "way of life"; for "value" we might use "what this group thought was important", and for "economics" we could substitute "how they earn their living". Although finding verbal mediators sounds an imposing task, it is in fact what good teachers do all the time.

The next step is to present examples of the concept, using the verbal mediator. In this manner, "way of life" could be made explicit by looking in depth at, for example, the different life-styles of Bushmen and Tuaregs, using pictures, stories, factual accounts, drama, and so on. Contrast is also a useful tool, for it facilitates the asking of questions in which children are expected to infer the genuine characteristics of a concept and to reject the fortuitous or irre-eca levant. At this stage the pupil's understanding needs to be deepened through implementing it in *tasks and discussions* otherwise it will remain in abstraction that is external to his "living ideas".

Since a concept is a way of classifying phenomena, it is useful to engage gifted pupils in classification activities. This will help to clarify their definition of the concept.

(ii) The learning of skills

When Bruner and others analysed the nature of knowledge they identified as important not only concepts but the characteristic modes of enquiry (skills). Just as there are characteristic concepts, so there are skills unique to a particular subject. For instance the modes of enquiry of a number of disciplines involve the same steps and research methods, while the taking of notes and the synthesising of material have many common elements. The same applies to reading skills.

Bruner argues that if children are taught such techniques, they not only learn skills that are transferable to the solution of other problems: they learn to make tentative conclusions and not to mistake interpretations for facts. They also learn how to record findings on a graph, how to conduct fieldwork in geography or science and how to use evidence as a historian does.

The teaching of such skills is generally accepted as necessary. However, of equal of greater importance is the teaching of advanced thinking skills - and this, too, is a relatively neglected field, although teachers universally acknowledge that one of the aims of education is to teach their pupils how to think. In this respect it is vital to remember that the asking of open-ended questions encourages the growth of thinking skills.

Another reason for the importance of teaching thinking skills is related to the development of concepts - for skills and concepts are closely linked. Having learnt a concept, the gifted child needs to use it, and this cannot be done in a vacuum - he cannot apply the concept "interpretation", for example, without interpreting something; nor can a concept be integrated into his permanent thought structure if it is not used.

Teachers should avoid obvious, closed questions that involve only factual recall, and ask open-ended questions that are varied, genuinely interesting, require tentative and not definite answers, and can be used to develop the intellectual skills of their pupils. Moreover, while content is specific to a certain discipline, concepts and skills once learned can be transferred to new situations both inside and outside the classroom. Such transfer is facilitated if teachers encourage their gifted pupils to reflect on the principles involved - on how a problem was solved, for example, and on the ways in which the criteria they have discovered relate to their own lives.

Gifted pupils' minds have their own laws and dynamics of growth. The school should not cramp this development but, by stimulating curiosity and the natural propensity for learning, should encourage each child to bloom in his own way. The school should confirm in him the value and authenticity of his own experience so that he learns to work joyfully, to live creatively, and to develop a strong sense of dignity and human worth.

(d) Developing self-evaluation in gifted pupils

Since one of the goals of education is to encourage the gifted pupil to become autonomous in his thinking, teachers need to consider how to help him become critical of the products of his thinking. Insofar as his maturity permits it, he should be encouraged to discover the criteria according to which his thinking is evaluated, judge the reasonableness of the criteria, and become self-critical in his judgement of the inferences, generalisations and predictions he makes. The gifted pupil's insight should not be limited to understanding why a teacher asks a particular question, but what the advantages are when small groups exchange information or when a person organises a large volume of information before trying to generalise from it.

Evaluation by gifted pupils need not be conducted in separate, formal sessions. Rather, experience indicates that these pupils' evaluation is more effective and less tedious when it is frequent and informal. They need frequent opportunities to focus on the strength or weakness of their generalisations or to examine the way they have used a particular chart or diagram.

(e) The organisation of the language curriculum for gifted pupils

Tempest (27) maintains that a language curriculum should contain the following three elements:

- Intellectual challenge through the quality rather than the quantity of the work

- Developing self-direction and independence of thought and action

- Encouraging originality and imagination

Susan Roberts and Belle Wallace (28) believe that the teacher should use the following avenues for enrichment:

- Building enrichment into the core curriculum
- Developing the child's own interests
- Widening horizons to include new interests.

They state that " ... this approach enables the gifted pupil to share learning experiences with others, to specialise in an area of personal choice, and to develop broader interests".

The more flexible a programme is, the more likely it is to succeed. However, it should be mentioned that in the language field the mere enrichment of the core curriculum and the provision of a vital and structured approach does a great deal to provide for gifted pupils and, indeed, to meet the needs of all pupils. The study of literature at any level, for example, is able to provide an avenue for as deep an exploration as the pupil is capable of carrying out. Moreover, meaningful experiences related to effective stimuli may provide the catalyst for writing of a far greater sensitivity than is possible from most of the class. The extent to which a child is able to benefit from such study is restricted only by his own skills and abilities.

This is indeed fortunate, for language is a communicative process. An effective language programme will enable gifted pupils to lead others and to share their knowledge with them. This would, however, not be the case at all in a lesson based on sterile language exercises. Here all pupils suffer, but gifted pupils most of all.

As the provision of creative teaching materials makes great demands on the teacher's time and abilities, and since effective programmes actually educate the teachers who use them, it seems essential that a system be developed on both a provincial and a national level with a view to producing materials and to sharing them as widely as possible.

8.6.3 Guidelines: language curriculum design for gifted pupils

(1) The need for direct experience

The richer school life is in first-hand experience, the greater will be the language growth of the pupils. Indeed, just to have lived through an experience is not sufficient - it must in some way have touched the gifted child inwardly. However, one needs to guard against a too simple definition of experience. It does not mean merely being involved in an objective event; it may also involve an emotional response to fiction or music, or a deeply imagined fantasy. If we are to help our children respond truthfully in their speaking and writing, we should accept responsibility for heightening the tension of experience and for arousing an imaginative awareness of the power of language. If we do not do this, many of our most talented pupils may never realise the extent of their own abilities.

(2) The importance of integrating language

James Britton (29) says that the language lesson is "the meeting point for all the pupils' experiences, the point of integration that makes them meaningful". He, together with numerous other researchers, insists that all language development is part of an integrated process which, if it is to be at all meaningful for the child, cannot be fragmented into different components such as Composition, Reading Study and Spelling - which are taught at different times according to a rigid time-table.

Language competence develops as a result of an interaction between listening, talking, reading, writing and experience; and through a direct study of the language itself within the context of reality.

This kind of experience forms an organic unity and offers the child the kind of holistic synthesis that he needs if fertile language growth is to take place. Thus, although for convenience and clarity the different aspects of language will be considered separately, it should be remembered that they are, in fact, not discrete. It is essential to realise that we cannot divorce language from context - they always go together. Furthermore, the more frequently the activities in one mode of language are related to what happens in others across the curriculum, the more deeply and effectively will concepts and skills be illuminated and reinforced.

The illusion that a child's language can be reduced to dichotomised parts should be destroyed; instead the awareness should be created that life is a fabric of relationships - an organic whole - in which coherence and order can be perceived and understood. Trivial ways of studying language which have no connection with reality should be avoided, for example reliance on the language exercise regardless of its relevance. Far more important is for teachers to help these sensitive pupils (gifted pupils) to link the exploration of their inner thoughts and feelings with their reflections upon the objective world around them. It is, after all, with this world that they must eventually come to terms by developing soundly based attitudes and relationships. Such a task goes much further than teaching flexibility in the use of language - it is part of the art of living!

Such support will help the gifted child to respect his own talents and give him the security to walk with confidence the road which he must largely travel alone.

Although the gifted pupil usually displays exceptional ability across the whole language spectrum, teachers should be aware that only with perceptive help and an imaginative and structured programme can the child's full potential be realised. Each aspect of language wil be dealt with separately here, although it cannot be sufficiently stressed that it is only when the pupil encounters language in its totality that his enthusiasm may be awakened.

(3) Listening

Listening differs from hearing in that it is a learned receptive skill. It requires concentration, responsive thinking and the involvement of the gifted in the selection of appropriate meanings and in their evaluation. *A child's listening competence is developed during his active participation in listening situations; therefore the teacher should ensure that listening is deliberately cultivated and practised.* Research indicates that there is a high correlation between listening skills and the skills of reading, writing and speaking.

The teacher's attitude to listening can make a crucial difference to the gifted pupil's ability to progress. The learning context immediately becomes more accommodative because it provides scope for the pupil to make a genuine contribution and to follow the thread of his own thoughts, instead of passively sitting in front of a talking teacher. Also the need to frame a response forces the child to reshape what he knows in a way that permits him to participate meaningfully in the classroom dialogue. In this way he welds the new learning to the old, and renders the whole meaningful.

In designing a language curriculum with a view to integrating the language components, the following aims with regard to listening as a component of language should be considered:

(i) To ensure that listening is seen as an active rather than a passive process, and that it is purposefully related to reading, speaking and writing.

(ii) To learn to listen intelligently, courteously and with comprehension, developing a readiness to consider new ideas and other points of view. Listening requires effort and concentration and involves comprehension and a critical evaluation of what is heard.

(iii) To adapt listening for a variety of different purposes. The gifted pupil should learn to distinguish the main idea from the supporting details, to discriminate fact, opinion and bias, to evaluate the tone of what he hears, and to understand the purpose of the author.

(iv) To develop sensitivity, and to respond to the emotional content of poetry, drama, films and music. Gifted pupils should be made aware of how voice tone and the choice of words convey mood. They should then compare the ways mood is achieved in poetry, drama, music and films.

(4) Speech

The verbal skill of many gifted pupils is one of their most marked attributes. From those pupils whose linquistic giftedness will enable them to play leadership roles or participate in fields such as drama, public speaking, lecturing or television presentation, a much higher standard of speech effectiveness is needed than is required from most of their peers. Thus it is the responsibility of the teacher to ensure that such pupils refine their superior verbal ability in wide variety of meaningful speech situations.

Even the youngest gifted pupils are capable of telling stories to others in the group or of sharing particular interests or skills. For older gifted pupils a wide spectrum of possibilities is available, such as debates, drama, reports, assembly programmes, the presentation of radio plays, lectures to other classes, forums, or the running of club committees. (These are teaching strategies that can be implemented in the classroom.)

Pupils of all ages also need to be helped to use the specialist registers of the content subjects, for from this group will come the historians and scientists of the future. Yet parallel with this training in spoken terminology there should at all times be an emphasis on fluent expression, on subject organisation and on a creative and imaginative response.

Speech enables gifted pupils to become conversant with new experiences, to experiment with hypothesis and to juggle with ideas. Britton (29) and others maintain that pupils can only integrate new concepts into their existing conceptual framework through the medium of speech which crystallises and confirms their ideas.

The questions that teachers ask are very important in encouraging speech development. Closed questions demand factual feedback and do not require the kind of exploration and speculation which does so much for language development and for enhancing confidence in the handling of strange terminology. Even when the teacher has an "expected" answer in mind, he should still consider other answers.

At all times gifted pupils should feel that their contributions are valued, and they should be required to listen courteously to the suggestions of other pupils.

In designing a language curriculum with a view to integrating the language components, the following aims with regard to speech as a component of language should be considered:

(i) To develop the gifted child's confidence that he has a valuable contribution to make and interesting experiences to share.

(ii) To help the gifted child speak fluently, distinctly and with enjoyment.

(iii) To help gifted pupils develop the ability to convey to others their observations, feelings and thoughts in an orderly, convincing and coherent manner.

(iv) To provide opportunities for gifted pupils during practical work to organise themselves through speech, to discuss what they are doing and to reflect on and explain what they have learned.

(v) To encourage gifted pupils to recognise the difference between speech and writing, and to explore these differences.

(vi) To develop in gifted children a sensitivity to the beauty as well as the power of language.

(5) Drama

The potential of drama in the development of the gifted child is of special interest at the present time. Drama is seen as a creative art form, characterised by its flexibility and versatility. Drama also offers a framework for the spoken language and immense scope for language in context: it permits the gifted child to explore social, domestic, historical and moral ideas and attitudes, and it deepens awareness of archetypes and themes. Moreover, by identifying with characters in a novel, by entering a situation through role play, and by broadening understanding of humanity through simulation, the pupil is able to explore social attitudes, personal relationships and conflicts. He can thus in profoundly creative ways, work out problems in the personal and social fields of human experience. He learns to empathise with others and to realise that life offers a rainbow of possibilities. The narrow prejudices that make us believe in a single view of the world, can in this vital and living way most easily be dissipated: pupils are given the opportunity to "rehearse" activities and emotions, and so to grow in character and insight.

The experience of drama is intensely personal, yet through the dramatic exploration of character, pupils are helped to understand others more fully. This is particularly valuable for gifted pupils whose social development may well lag behind their intellectual development. Moreover, the effort required to dramatise imaginative ideas compels the gifted pupil to order and arrange his inner experiences (which serve as the catalyst for his ideas), thus creating a deeper personal harmony. Drama, in addition, helps to intensify thoughts and feelings to the point where they can be symbolised in speech and gesture. Considerable creativity is involved in this process which lays so much emphasis on the spontaneity of the child's reaction to the stimulus, and which demonstrates communication in its fullest and truest sense (compare Marjourie Hourd 30).

In designing a language curriculum that provides for drama as a means of developing language, the following aims should be considered:

(i) To help the gifted child through drama to develop an understanding of his environment and of various social roles and life situations.

(ii) To encourage self-confidence and the ability to use vital, colourful speech.

(iii) To develop observation and imaginative sympathy in view of the fact that the individual reacts with others in the group.

(iv) To create an awareness of social issues and to develop confidence in discussing these and in arriving at tentative solutions.

(6) Reading and literature

One of the most important facts underlined in the Bullock Report (1970) is that reading is a developmental process involving the mastery of a hierarchy of increasingly complex, interrelated skills that begin in the first years of school and continue right through to university. To develop these skills successfully, pupils need expert instruction from teachers throughout their school careers.

This is as true of the gifted pupil as it is of his classmates. Continuity between schools and the need for ongoing reading development, reading for specific purposes, and reading for pleasure, all require the school to develop an integrated reading programme that enables the pupils to extend their reading in such a way that it becomes an essential part of their growth in thinking and learning.

For many gifted pupils reading is already a passionate interest and thus the need is for development rather than for basic training. Evans (31) suggests that emphasis be laid on the following areas:

- Understanding the meaning of key words and phrases.
- Extracting the most important ideas and distinguishing between these and mere detail.
- Understanding and extracting a sequence of ideas.
- Drawing conclusions and forming opinions.
- Predicting likely consequences.
- Understanding relationships and relating effect to cause.
- Distinguishing fact from opinion and hypothesis from proof.
- Identifying problems of interpretation - ambiguities, irony and metaphorical language.
- Reading critically and appreciatively.

Literature that is relevant and enjoyed unreservedly breaks down the boundaries between spoken and written language, offering the child an infinite variety of new forms and structures to act as models, and a magical kaleidoscope of words that present a landscape of unending possibilities. This is of vital importance because language is the means whereby we structure reality; and, whereas other media present experiences that are mainly pictorial, only books offer those that are primarily linguistic. Language is not only a prerequisite for acquiring other forms of knowledge, it is also essential for the organisation of thinking. Words are powerful symbols that motivate behaviour, enabling us to recognise and control emotions and to make intelligible the flood of experiences that would, otherwise, be incomprehensible.

In the living framework created by literature, the imagination is not stifled by the learning of essential skills, but is rather set free. The gifted child with a need to communicate, willingly accepts the discipline of imaginative structures and fluid forms. It is only once such excitement has been engendered that one can successfully subject pupils to continuous pressure to achieve excellence without running the risk of their becoming less involved and losing interest.

Too many of our gifted pupils never achieve the individuality and success that they should. Literature offers teachers the opportunity to help these pupils discriminate between the genuine and the synthetic, and to find in their work and in their own lives the kind of deep satisfaction achieved by a master craftsman who is proud of his creation - such as that felt by a poet, a potter or a musician.

In designing a language curriculum in which reading and literature are an integrated component, the following aims should be considered:

(i) To encourage pupils to enjoy reading.

(ii) To bring about language growth and to lead the gifted child to a greater appreciation of the beauty and power of language.

(iii) To use books and poems as a stimulus for creative expression; and to provide models of the different registers, structures and styles with which the gifted child needs to become familiar.

(iv) To expand the gifted child's experience of life so that he obtains emphatic understanding of others; and to develop his self-knowledge, self-understanding and moral awareness.

(7) Writing

Like speaking and the other language skills, writing is a developmental process. It takes experience, opportunity, practice, specific skills and direct teaching to become a writer. It needs ideas that are logically organised, clearly expressed and structured in an interesting and original way. It requires careful research, accurate observation and precise discrimination in the choice of topic and style. And, finally, proofreading, rewriting and polishing are required to develop the writing from an embryonic idea to a work of art.

Feedback is of special importance to gifted children, because without a sensitive response they have no means of assessing the worth of their contributions. A comment such as "excellent" is quite inadequate as each language "athlete" needs specific training if he is to win his own unique race. Because he has a deep urge to refine his workmanship, he needs informed and detailed criticism of style, structure and content. If a teacher feels he is incapable of handling the complexity of such a task, help should be sought from other members of the staff, or even from the community. Indeed such wider recognition may be just the spur such a pupil needs.

It is important to remember that writing should be an integral response to the nature and quality of the experiences to which it is linked. The more deeply the pupil is involved, the greater will be his creative need to grapple with emotions and thoughts and to express them in vibrant language and relevant forms. Such unity will be characterised by a genuinely personal relationship between subject and author, and as a result of this, it will possess meaningful associations for readers, despite the youthfulness of the writer.

There are three vital elements in the writer's situation. Firstly, he must have an experience that he wishes to communicate - in other words a purpose. Secondly, he requires an audience to whom he feels free to speak; and thirdly, he must select language appropriate to both topic and audience.

The gifted child's goals should be defined in consultation with the teacher, who needs to provide a variety of stimuli that generate the urge to communicate. These should cover as broad a spectrum as possible, for it is when the child finds that his own linguistic resources are inadequate that he is most likely to incorporate new language from his hearing and reading into his speaking and writing. Once the teacher starts creating or stimulating situations for language use, he will find that his teaching becomes transformed. It will certainly become more purposeful. The relationship between the teacher and his gifted pupils will tend to grow closer. Language is so central to the concerns of everyone, that dealing with language in this way is in itself conducive to a high level of motivation.

In a conversation the importance of an audience is obvious. Not only does the speaker receive valuable feedback, but he quickly becomes aware of any lack of understanding. It is also relatively easy for him to assess the extent to which he and the audience share linguistic and other experiences. In written language this presents grave difficulties since the writer has no feedback at all. Renzulli (7) points out that an audience can transform the motivation - and even the lives - of gifted children. Unless work has meaning for them, they see no purpose in perfecting it. Every writer has to identify his audience as this gives direction to this writing and provides the crucible in which disparate elements are melted together will emerge as a living art form. Without such limitations, the task of selecting an appropriate style becomes formidable.

If the writing of gifted pupils is to achieve the joy of the swallow which swoops with delight in its mastery of its element, we need to ensure that the experiences of these pupils are meaningful to them, acting as the catalyst for feeling and thoughts which they deeply need to share, or which they wish to refine in written form. Gifted pupils need to explore the attributes and structures of their language so that they can eventually write with originality and insight.

In designing a language curriculum for gifted pupils with writing as a component of language, the following aims should be considered:

(i) To encourage gifted pupils to express their imaginative and creative ideas, thoughts and feelings, as well as their perceptions of others' thoughts and feelings.

(iii) To extend and develop gifted pupils' experience of language, to give them some understanding of how language works, and to help them develop an appreciation of the principles that underlie all four forms of language - listening, speaking, reading and writing. Isolated formal grammar exercises are counterproductive: the emphasis should be on language in action, which implies an incidental approach based on error analysis of pupils' written work.

(iv) To extend gifted pupils' vocabulary so that they can use words easily, appropriately and fluently in a widening range of situations. Vocabulary should be enriched as part of a purposive teaching policy. Gifted pupils should acquire a vocabulary that enables them to meet the demands made by their own writing, literature, the media and social situations. Knowledge of stems, prefixes and suffixes can provide clues and help pupils build up their vocabularies. Words should be explored in configurations or in context, for example in relation to literature or in "word families".

8.6.5 Concluding remarks

Language is fundamental to the progress of gifted pupils, both because of its instrinsic value and because mastery of language is the key to effective performance in all other disciplines and even to a meaningful experience of life itself.

By helping our gifted pupils to become more aware of themselves, their environment and their fellow men, by encouraging them to test their insights against those of our wisest men through perceptive reading and by training them to crystallise their ideas by writing with vision and sincerity, we can better ensure the growth of their developing personalities and nurture their potential to enrich the years ahead.

8.7 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE NATURAL SCIENCES FOR GIFTED PUPILS

8.7.1 Distinctive character of the natural sciences

The province of the natural sciences can be divided into the following main areas: the physical and biological sciences and the earth sciences.

At school level the physical sciences are represented by Physics and Chemistry (these two subjects), and the Physics and Chemistry component of General Science), the biological sciences by Biology and Physiology and the relevant components of General Science, and the earth sciences by components of Geography. At school level two or more of these disciplines are often either combined or integrated (General Science - RSA: combined - or Integrated Science (United Kingdom).

The physical sciences in particular rely heavily on *mathematical* principles and formulations. As the level advances, the mathematical component increases until some conceptual models (such as elec-

(iii) To extend and develop gifted pupils' experience of language, to give them some understanding of how language works, and to help them develop an appreciation of the principles that underlie all four forms of language - listening, speaking, reading and writing. Isolated formal grammar exercises are counterproductive: the emphasis should be on language in action, which implies an incidental approach based on error analysis of pupils' written work.

(iv) To extend gifted pupils' vocabulary so that they can use words easily, appropriately and fluently in a widening range of situations. Vocabulary should be enriched as part of a purposive teaching policy. Gifted pupils should acquire a vocabulary that enables them to meet the demands made by their own writing, literature, the media and social situations. Knowledge of stems, prefixes and suffixes can provide clues and help pupils build up their vocabularies. Words should be explored in configurations or in context, for example in relation to literature or in "word families".

8.6.5 Concluding remarks

Language is fundamental to the progress of gifted pupils, both because of its instrinsic value and because mastery of language is the key to effective performance in all other disciplines and even to a meaningful experience of life itself.

By helping our gifted pupils to become more aware of themselves, their environment and their fellow men, by encouraging them to test their insights against those of our wisest men through perceptive reading and by training them to crystallise their ideas by writing with vision and sincerity, we can better ensure the growth of their developing personalities and nurture their potential to enrich the years ahead.

8.7 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE NATURAL SCIENCES FOR GIFTED PUPILS

8.7.1 Distinctive character of the natural sciences

The province of the natural sciences can be divided into the following main areas: the physical and biological sciences and the earth sciences.

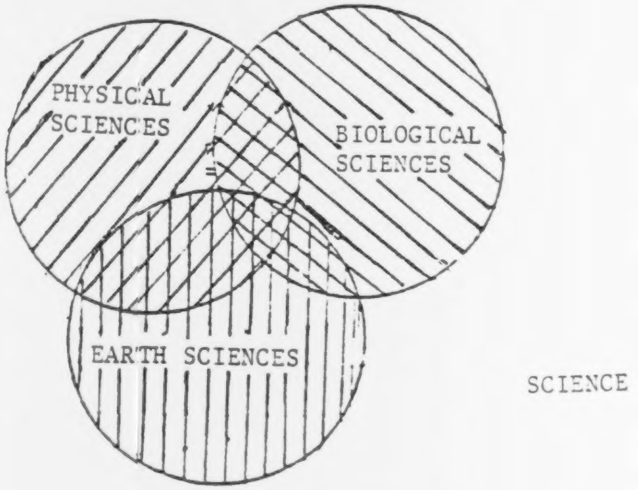
At school level the physical sciences are represented by Physics and Chemistry (these two subjects), and the Physics and Chemistry component of General Science), the biological sciences by Biology and Physiology and the relevant components of General Science, and the earth sciences by components of Geography. At school level two or more of these disciplines are often either combined or integrated (General Science - RSA: combined - or Integrated Science (United Kingdom).

The physical sciences in particular rely heavily on *mathematical* principles and formulations. As the level advances, the mathematical component increases until some conceptual models (such as electromagnetic waves, atomic and molecular orbitals) are purely mathematical.

Quite apart from this interaction between Mathematics and the natural sciences, the demarcation between the various disciplines is by no means absolute. Such concepts as atomic structure, the physical properties and behaviour of matter, and radiochemistry form adjoining and overlapping areas in physics and chemistry, and biochemistry is a common area of chemistry and biology. The earth sciences, such as crystallography, geomorphology, petrology and paleontology, apply principles from or overlap with Mathematics, Physics, Chemistry and the biological sciences.

The natural sciences can therefore be seen as part of a continuum of scientific study (compare for example the overlap between the natural and human sciences in psychology). Certain areas of study have been highlighted on the grounds of similarity, convenience, specialisation and suitability for specific research modes and working procedures (see Fig. 1).

FIGURE 1



8.7.2 Aims of the natural sciences as school subjects

It should be clear that no more than a restricted selection from the natural sciences can be presented at school level. *At the same time, such a selection cannot be haphazard or a matter of personal preference: it has to be subject to educational criteria.* Such criteria will obviously change according to the level of presentation (primary, junior secondary and senior secondary level) and the purposes of which the subjects are taught.

Criteria for the selection of curriculum contents were discussed in Chapter 7, and these apply to the natural sciences as well. The aims of teaching these subjects form a hierarchy, from a basic development of awareness and interest in natural phenomena (primary) to specific knowledge, understanding and appreciation of subsections of these subjects and of the areas and procedures of the natural sciences as a whole. Specific objectives for the various levels are usually stated clearly in the subject syllabi for the various phases, and they are discussed in detail in the literature.

In this consideration of the scientifically gifted pupil an attempt will be made to formulate *ultimate goals* for the teaching and development of these pupils. They should *progressively understand*

(i) that the trend in all the natural sciences, especially the physical sciences, is towards increasing theoretical abstraction and exactitude, while the biological sciences tend to be correlational and comparative;

(ii) the current theoretical framework of the exact natural sciences and the limitations of current explanatory structures in the biological sciences;

(iii) the development of biological research procedures - from simple observation to taxonomy and thence to descriptive and comparative morphology, finally adding analysis to description, and the fact that biologists use a whole range of methodological approaches;

(iv) the logical, mathematical and syntactic structure of the physical sciences, which serve as a paradigm of the exact, deductive sciences;

(v) that the deductive approach does not apply at all levels of the biological sciences but is more applicable in certain areas (such as genetics), and that a classification system is not deductive but may well furnish clues to relationships;

(vi) that the relevance and reliability of the constructs (hypotheses, concepts) of a science are determined by its underlying theoretical structure and that a construct is not valid unless it fits into an existing (accepted) theory and operates successfully in scientific prediction;

(vii) the distinction between structure and development and between the inductive and deductive aspects of theory; the fact that conceptual structures consist of inductions which in turn consist partially of deductions from existing theories; that scientific "symbols" are designed to represent phenomena and form the semantic component of science; that the scientific criterion of truth is to be found in data that can be understood and verified by anyone with the necessary training;

(viii) the role of the systematic observer as a construer of reality;

(ix) the relation between theory and observation (without theory there is no clue as to *what* to observe);

(x) the role of operational analysis as an inherent part of scientific procedure or method;

(xi) the role of operational definitions in prediction, since prediction becomes possible only when the terms contained in scientific principles have been operationally defined;

(xii) that concepts in Physics cannot be separated from the operations that gave rise to them - in other words, no report of observations can be interpreted without a knowledge of the theory underlying the instruments of observation;

(xiii) the indissoluble link between the knower and what is known - in other words, that a person's philosophy of science is influenced by other areas of thought such as religion, philosophy, logic, mathematics and technology;

(xiv) the restrictions imposed on the development of science by rigid assumptions, by the use of language in the formulation of scientific constructs, by human limitations in observation and interpretation, by inaccuracies of measurement and by the limitations of instrumentation as an extension of human powers of observation (sense perception);

(xv) that models can be used to represent various sets of relationships and that such models may be mechanical, linguistic, mathematical, and so forth; that the models have become increasingly theoretical and abstract as the natural sciences have developed (particularly the development from physical to mathematical models); that a scientist uses models and representations to bring order to relationships and to formulate hypotheses; that models are idealisations commonly used as pedagogical aids but are not synonymous with physical reality;

(xvi) that imagination, intuition and abstract construction are essential components of the scientific exploration process; the use of analogy as an exploratory method, which nonetheless cannot achieve a complete and unique correspondence; the connection between discovery and the prepared mind;

(xvii) that the exploration of subjects and areas of knowledge that will deepen understanding in all these areas, are important.

It should be emphasised that these goals are the ultimate ones that *ought* to be achieved by the scientifically gifted pupil during the period of his undergraduate and postgraduate study and concomitant development as a practising natural scientist or researcher. The educational problem is to select from all these tasks those which have to be (a) *initiated* and (b) *developed* at school level, and (c) to determine what degree of development can *reasonably be expected,* without stipulating such expectations as a ceiling.

8.7.3 Implications of the aims of the natural sciences for the design of curricula for gifted pupils

The set of goals in the previous section has many implications. It is readily apparent, for instance, that the following are essential:

(i) A certain minimum mathematical knowledge and ability;

(ii) the necessity for the curriculum to include more than one natural science;

(iii) the ability to use language correctly and to formulate and express ideas clearly and intelligibly;

(iv) exposure to subjects/activities that stimulate and develop the imagination, intuition and creativity.

The following curriculum contents are recommended for the various phases, with due consideration of the school subjects currently being taught:

The preprimary phase (prebasic education). Exploratory activities such as nature table, pets, sand and water games, eye-hand co-ordination and skills, classification and construction activities.

Junior primary phase (basic education). Environmental observation and elementary mathematics (plant and animal life; types of minerals (stones); rainfall, wind, clouds, sunshine, meteorological maps; collections, classifications and the like.)

Senior primary phase (basic education). General Science (3 years); Mathematics (3 years); Geography (3 years). Enrichment of syllabi; research projects and use of sources.

Junior secondary phase (secondary phase of the postbasic phase). General Science (3 years); Mathematics (3 years); Geography (3 years); as for senior primary but more structured.

Senior secondary phase (secondary phase of postbasic education). Mathematics (3 years); Physics and Chemistry (3 years); Biology (3 years) and/or Geography (3 years).

Each phase should also incorporate, in addition to language, familiarisation with/participation in music/graphic arts/music or art appreciation or other activities that stimulate the imagination.

During the senior secondary phase a third language (such as German for the pupil with an aptitude for the physical sciences, or Latin for the pupil with an aptitude for the biological sciences) would be a desirable addition.

Gifted pupils should be introduced to computers no later than the senior secondary phase. This need not form part of the curriculum.

8.7.4 Teaching-learning opportunities for the scientifically gifted pupil

Teaching-learning activities such as the following, adapted to the pupil's development level, should be included at the senior primary and secondary levels:

(i) Learning *laboratory techniques* (e.g. histological, bacteriological and analytical-chemical).

(ii) Learning the use of various types of *laboratory apparatus* (such as an analytical massmeter, microscope, electrical oven, meters).

(iii) Learning *construction skills* with a variety of materials such as wood, plastic and metal.

(iv) Developing *library research methods,* including reading up on or referring to sources in such subjects as Biology, Physics and Chemistry.

(v) Taking part in *original research* under the teacher's guidance.

(vi) Receiving instruction in *Mathematics* (up to infinitesimal calculus during the secondary phase) and the application of mathematics to physical situations, using experimental data.

(vii) *Writing reports* on research or reading projects and/or assignments.

(viii) Holding *exhibitions* and demonstrations of work for fellow pupils, parents and the public.

(ix) Holding *seminars and discussion groups* on certain aspects of subjects, the social and other implications of natural science, its applications (technology), and so forth.

(x) At senior secondary level, presenting opportunities for *more advanced study* in certain subjects or modules by way of university courses, extracurricular instruction centres or other appropriate means.

8.7.5 The teacher of the scientifically gifted pupil

No subject curriculum, no matter how carefully planned, can operate successfully without a teacher. Research indicates that a school that wants to introduce curricula for scientifically gifted pupils needs a "suitable" teacher or teachers, either on its staff or drawn from the parents or public.

The success achieved by pupils in the USA in the Westinghouse National Science Talent Search examinations led to a study of 82 of the most "successful" teachers. The findings are illuminating:

(i) They were exceptionally well qualified both in the relevant natural science subject(s) and in education. (Over 90 per cent had postgraduate qualifications in the relevant subject or the teaching of it.)

(ii) Over 50 per cent had taught at a tertiary institution.

(iii) Over 90 per cent had published at least one article on the subject itself or on the teaching of it.

(iv) With a single exception, all had held a position in a local or national teachers' association or technical association.

282

(v) All had been involved in course or syllabus design committees.

(vi) They enjoyed above average health and all had excellent attendance records.

(vii) All took part in some form of sport.

(viii) Twenty-two per cent of the teachers had "high-level" hobbies such as chess or art collecting.

(ix) Most were physically vigorous and decisive in their actions.

(x) Most had a sense of humour.

(xi) Most were experts in leading discussion groups; all were excellent demonstrators.

(xii) All expressed some form of dissatisfaction with their own teaching, their knowledge of the learning process and the professional status of teachers.

(xiii) All were respected by their pupils, not only as experts but as people.

(xiv) All intimated that they wanted to remain teachers - in other words, they had chosen teaching as a permanent career, although some had not always been teachers.

(xv) Their average age was approximately 40.

(xvi) They liked children and young people.

It can be seen from the foregoing that there is a remarkable similarity between the personality traits of the scientifically gifted pupil and his successful teacher, though the "activation factor" is somewhat different. For teachers, the primary activation factor appears to be "the opportunity to teach".

The activation factor for the "successful" teacher of this type of pupil appears to be a combination of

* sound training in the natural sciences;

* the opportunity to teach and a firm choice of teaching as a career;

* successful relationships with children in the teaching situation.

The availability of teachers equipped to teach scientifically gifted pupils should be a factor in the initial evaluation (situational analysis) of subject curriculum design.

8.7.6 Evaluation

Evaluation of the success or failure of a school subject curriculum (including the evaluation of pupil progress) is restricted to the measurement, testing and evaluation of what can be achieved at school level. The long-term success of such a curriculum is obviously beyond the scope of a school evaluation system. The designer of programmes for scientifically gifted pupils need to be aware of this limitation lest he make unwarranted extrapolations from the immediate "success" of school programmes.

The literature contains detailed references to the advantages and disadvantages of formal evaluation at the primary (especially junior primary) level. In respect of the natural sciences, however, there is little justification for an evaluation system that overemphasises the testing of factual knowledge. Evaluation is necessary to the curriculum developer. Evaluation of the program and not his subjects is an integral part of the research and development activities.

The evaluation of a child's achievement in elementary school science cannot be rationally justified. What is the standard to which he will be compared? Should he be compared to his *local* peer group? Should he learn that he cannot achieve in science - simply because he's a few months behind his neighbour in cognitive development?

The very nature of the basic goal of primary science education (introduction to and generation of interest in the natural world) makes it clear that most evaluation at this level should be informal rather than formal.

The secondary phases bring a gradual shift in goals and hence in emphasis. The junior secondary phase can be seen as a transitional phase. The arousal of interest is still a significant goal, but the gradual building up of essential underlying constructs (concepts) has begun.

Hence, for the scientifically gifted secondary school pupil, the greatest possible variety of evaluation methods of independent work, written and other projects and assignments and oral work should be used in addition to the ordinary evaluation procedures. While no fixed rules can be laid down, the curriculum the designer should (as a part of the curriculum) stipulate the various evaluation techniques and the type of activity to which they are most appropriate, so that the teacher can make a meaningful choice and combination. Under the heading "The key to good evaluation", Anderson (1972) writes as follows:

> Basically, science is included in the curriculum because it is such a large and influential part of our culture. Of course, science is much more than a body of knowledge of the material universe. To understand science involves both the process of science ... as well as the products of science (the body of knowledge that results from the investigations). Since a basic objective is for children to understand science, our specific objectives for each unit or day should reflect this basic and far-reaching objective ... The precise objectives ... should reflect the fact that a basic and overriding objective is that children will acquire an understanding of both the products and processes of the scientific enterprise.

8.7.7 Concluding remarks

Clearly the natural science curriculum for gifted pupils is not simply a matter of "more" or "deeper" study - it includes developing the "understanding" of concepts. This can eventually produce an exceptional level of scientific literacy, as stated in the objectives listed in Paragraph 8.7.2.

Curriculum design for scientifically gifted pupils can therefore not be limited to the subject matter and activities of individual natural sciences subjects. The total curriculum (course combination) is just as important. Apart from Mathematics, a physical and a biological science and an introduction to computers (an essential component of modern scientific practice), the course should be constituted and designed to stimulate and develop the pupil's imagination and enable him to understand, consolidate and develop his perspective on the science culture as a subsection of the totality of human culture.

8.8 AIMS AND GUIDELINES: CURRICULUM DESIGN IN THE ECONOMIC SCIENCES FOR GIFTED PUPILS

8.8.1 Introduction

A national strategy for the education of gifted pupils needs to be *flexible and adjustable.* For this reason, and because specific giftedness emerges progressively as a child grows, there is no need to design a detailed subject curriculum for every subject at the secondary level. *We shall therefore do no more than suggest guidelines for each subject.* The economic sciences consist of eight subjects, each with an approved core syllabus, and are divided into three groups:

(i) Accounting and Business Mathematics

(ii) The so-called content subjects: Economics, Business Economics and Mercantile Law

(iii) The skills subjects: Typing, Shorthand and Snelskrif

Guidelines will now be discussed for curriculum design in the areas of Accounting, Business Mathematics and the content subjects Economics, Business Economics and Mercantile Law.

8.8.2 Aims and guidelines: curriculum design in Accounting and Business Mathematics for gifted pupils

(1) Aims as a component of curriculum design

The aims of Accounting and Business Mathematics are complementary and can be stated as follows:

(i) The aims of Accounting are to equip the pupil with a knowledge of arithmetical concepts, principles and procedures. Business Mathematics develops the pupil's skill in working with figures.

(ii) A further aim in Accounting and Business Mathematics is to facilitate the pupil's incorporation into society when he is older, in the sense that arithmetical knowledge and business mathematics skills are an essential part of daily life.

(2) Guidelines for the design of curricula in Accounting and Business Mathematics

Although the aims of Accounting and Business Mathematics are complementary, not all schools teach both. The following guidelines can be followed in designing curricula for gifted pupils in these two subjects:

(i) Integration of subject matter. The Accounting curriculum can be enriched by adding components of Business Mathematics, for example by teaching the pupils about the computation of interest, profit and loss, exchange rates, taxes, bankruptcy, buying and selling of shares, annuities and graphs.

(ii) Pointing out the connection between Accounting and Business Mathematics and the other economic sciences. The Accounting curriculum can be enriched by adding themes such as the one-man enterprise, the partnership and the company. The advantages and disadvantages of each type of enterprise can be evaluated by including the relevant section from Business Economics.

8.8.3 Aims and guidelines: curriculum design in the subjects Economics, Business Economics and Mercantile Law for gifted pupils

(1) Aims of these subjects vis-à-vis gifted pupils

The subject matter should

(i) foster the pupil's insight, perspective and ability to make associations;

(ii) indicate the interrelationship and interdependence of the economic sciences in order to provide an overall perspective on these sciences;

(iii) make provision for abstraction and theorisation;

(iv) promote independent thinking by creating problem-solving situations.

(2) Guidelines for the design of an Economics curriculum for gifted pupils

(a) Guidelines for curriculum design

Guidelines for the design of an Economics curriculum should provide for the following:

(i) Analytical and critical comparison of various economic systems against the background of universal economic problems.

(ii) Macro-economic studies of the rise, development and functioning of such systems, decision making with regard to production (what to produce, how to produce it and how to maintain production).

(iii) Income distribution and the macro-economic theory.

(iv) Economic objectives of growth and stability, and the concomitant problems of inflation and unemployment.

(v) South Africa and the global economy: the importance of international trade and finance and the international economic power struggle.

(vi) The role of government in the economy.

(vii) The role of money and financial institutions in a modern, highly industrialized society.

(viii) Schools of thought in economics, and specific economic theories and laws.

(ix) Power formation and the trend towards amalgamation and economic monopolies.

(x) Economic analyses of social phenomena (crime, drug addiction, pollution).

(xi) Solutions to economic problems.

(b) **Teaching strategies or methods for the subject Economics**

Provision for the learning needs of gifted pupils calls for teaching strategies to implement the curriculum. The following strategies can be considered:

1) **Individual programmes for independent study by way of research**

Research skills include the following:

* *Dictionary skills* - the use of alphabetical sequence and key words, the interpretation of meanings, and correct spelling.

* *Reference skills* - the use of a book's introduction, table of contents, glossary and index, and how to find information in an encyclopedia.

* *Library skills* - knowing the type of information that is available from various sources, how such data are arranged, and how to use a card catalogue, magazine index and microfilms.

* *Graph and table skills* - knowing the purpose of graphs and tables, how to read and compile them and how to make deductions from them.

2) Problem-solving situations

A gifted pupil should learn how to

- identify and define a problem;
- research the problem and collect information;
- find a method or procedure for the solution of the problem;
- generate a variety of ideas and list the major aspects of the problem;
- select the right solutions from a number of possibilities.

(3) Guidelines for the design of a Business Economics curriculum for gifted pupils

(a) Guidelines for curriculum design

The following guidelines can be followed in designing a Business Economics curriculum for gifted pupils:

- An association should be established between the overall subject and the various related topics and concepts within the subject.
- Constant correlation with related subjects is necessary to promote insight into the interrelationship of the subjects and eventually an overall image.
- Self-activity should be promoted by for example discussing topical areas of business economics, compiling and discussing reports and interpreting statistical data.
- The undertaking of appropriate elementary case studies is essential for the enrichment of this subject.

(b) Teaching strategies or methods for the subject Business Economics

The following teaching strategies can be considered:

- *Case studies.* Gifted pupils can be given topical issues as independent study assignments. The research method can also be implemented.
- *Interpretation of statistical data* can be done to elucidate a facet of Business Economics.
- *Investment projects* can be undertaken.

(4) Guidelines for the design of a curriculum in Mercantile Law for gifted pupils

(a) Guidelines for curriculum design

The following guidelines can be used in designing a curriculum in Mercantile Law for gifted pupils:

- Promoting logical, analytical and critical thinking by encouraging pupils to study legal terminology as used in established legal procedures so that they can grasp the legal implications of specific situations.

- Emphasising the relationship with other economic sciences by incorporating, correlating and synchronising related subject matter.

- Enriching their education by incorporating case studies of court cases in the curriculum.

(b) Teaching strategies or methods for the subject Mercantile Law

The research model in particular will be found useful in enriching the subject matter and the pupils' learning experiences.

8.8.4 Concluding remarks

The above guidelines should prove very helpful to those who have to design curricula for the economic sciences.

8.9 AIMS AND GUIDELINES: DESIGNING A CURRICULUM FOR LEADERSHIP DEVELOPMENT AMONG GIFTED PUPILS

8.9.1 Defining the talent leadership

Leadership ability and exceptional social skills are internationally recognised as manifestations of giftedness and as such are included in definitions of giftedness. South African definitions, too, indicate a connection between leadership ability and giftedness, and strong emphasis is also placed on the leadership that the intellectually and otherwise gifted person can offer to society.

A common error, however, is the assumption that leaders are necessarily intellectually gifted. Exceptional intelligence is by no means a prerequisite for leadership. Research has shown that leadership ability can emerge in any group and that the exceptional achiever in a given area will not necessarily be the leader. Pupils with exceptional social skills may develop into competent leaders if these abilities are positively channelled and developed. The following distinctions should be made in respect of leadership potential:

(i) It would be true to say, in accordance with the group function theory of leadership, that *all pupils have leadership potential* insofar as they perform group functions for the sake of task performance and group cohesion.

(ii) Pupils with exceptional *social abilities or skills* (gifts) are potential leaders who *can develop into high-profile leaders* if their abilities are positively developed. Such pupils are capable of good interpersonal relationships and possess exceptional communication skills.

(iii) *High-profile leaders* are pupils who give frequent evidence of leadership ability, or who have already been elected or nominated to leadership positions (such as captains of sports

289

teams, prefects, chairpersons of school committees, school magazine editors). Such pupils possess some degree of the leadership skills and knowledge required for leadership positions.

8.9.2 Guidelines: designing a curriculum for leadership development

(i) In a democratic society, leadership development and action should contribute to the consolidation of democratic values. (Leadership development is directed according to specific values.)

(ii) The development of leadership potential should promote fuller development of the potential of all pupils. (The pupils themselves are a vital determinant of leadership development.)

(iii) The development of leadership potential should supply the growing leadership needs of society - particularly in view of the leadership need in the current posttechnological era with its unique problems and rapid change.

(iv) Attempts to rationalise objectives call for leadership development, which should provide for the socialisation of pupils by setting cognitive, affective and social educational objectives.

(v) The selection of subject matter for leadership development should be regulated by a democratic leadership ideal. The choice of factual and experiential matter should allow for pupil co-responsibility and should emphasise positive social values.

(vi) A leadership development curriculum and programme need to be evaluated. Such a curriculum and programme should, like any other educational undertaking, be evaluated in terms of a particular view of life and of pedagogic, psychological and didactic principles. Objective evaluation and self-evaluation are two matters that should be constantly emphasised in the development of leadership.

8.9.3 Proposed provision of education in leadership as a special form of giftedness: A rational for leadership development

The leadership potential of pupils needs to be developed because

* such a programme helps to develop a pupil's full potential;

* it can benefit the entire school system, since the school as an educational institution offers numerous curricular and co-curricular opportunities for leadership which call for pupil leaders;

* society needs dynamic leaders.

8.9.4 Guidelines: designing a curriculum for leadership development in a class and subject context

(1) Leadership development opportunities in a class and educational context

Leadership development can be included as a curricular theme in the class and subject context - a great many skills can be developed and specific attitudes to leadership inculcated. Certain teaching methods are more conducive to leadership development than others. By teaching the subject matter and implementing such methods, a competent teacher can draw out the leaders among his pupils and also develop specific leadership skills.

By grouping pupils for the achievement of certain objectives, they can be given useful insights into group functioning, group structure and human relationships, and using pupils as leaders (as group leaders or in a teaching capacity) in a class and subject context will provide valuable leadership experience.

The following subjects should be included in a curriculum for leadership development in a class and subject context:

* Analysis (elucidation) of values;

* characterisation of leadership and related matters (leadership theories and learning styles);

* self-knowledge, knowledge of human nature and social awareness;

* group dynamics factors (group working methods);

* building team spirit and morale, utilisation of potential, handling of conflict;

* knowledge of procedures (handling of practical issues);

* problem solving and decision making;

* research (study) methods;

* modes (channels) of communication.

(2) Implementation strategy for the development of leadership in a class and subject context

* Teaching methods that allow for independent or group work, enabling pupils to act as group leaders or on their own initiative (conversational, group work and independent activity methods - experience-oriented methods).

* Dynamic, relevant, imaginative, problem-oriented assignments and research of study topics that can be carried out singly or in groups for the acquisition of knowledge (the heuristic learning method: a questioning, challenging, critical approach to topical problems).

- Maximum utilisation of pupils as leaders in formal and informal class and subject-related activities, initially with firm teacher guidance (using handbooks, assignment analyses, assignment cards) but eventually on their own initiative and responsibility (examples: class captains; members of committees and subcommittees; organisers; planners; speakers; lecturers; demonstrators; explainers; language advisors; masters of ceremonies; games leaders; drama directors; soloists; actors; liaison people; class journalists; teams and small group leaders; selectors; evaluators; judges; compilers; auditors; research leaders; consultants; academic mentors and advisors of new or less proficient pupils or others in need of help; panel leaders; analysts; teacher assistants; media designers, guides, class treasurers; curriculum planners and designers; spokespeople; representatives; delegates; editors and reviewers of manuscripts or correspondence).

- Maximum involvement in teaching by way of pupil participation in the planning and evaluation of instruction and class organisation (co-curriculum designers regarding proposals for activites, goal setting, subject matter, topics, agendas, procedures, outings, methods, sources, media, projects, problems, solutions, explanations, possible applications, standards and criteria, questionnaires, rules of behaviour, control, organisation, alternatives, possibilities, changes, innovation, establishment of links, functions, evaluation methods).

- The complete organisation and presentation by pupils of subject-related activities (extramural class projects, intersubject and interclass projects, presentations, exhibitions, memorial programmes, social occasions, fund raising, functions, work seminars, training opportunites, group action, visits, outings and fieldwork).

- The initiation, establishment and organisation of subject societies, clubs and associations for high-profile leaders (chairmen and members of committees and subcommittees who arrange meetings, presentations, functions, enterprises, projects and fund-raising campaigns).

- Withdrawing out high-profile leaders from a class to attend a magnet class programme or establishing a special group of pupils with exceptional social skills to participate as a group in subject and subject-related activities inside or outside the classroom (specially designed programmes for pupils with exceptional leadership potential - these groups need not be permanent but can be constantly reconstituted in terms of current needs).

8.9.5 Guidelines: designing a curriculum for leadership development by means of school subject clubs and other associations

(1) General development opportunies in associations

An association presents ideal opportunities for leadership development in that pupils can occupy leadership positions and all pupils can take part in its activities. If the school community has a wide range of associations, the whole pupil body can be drawn into one or another of them. Apart from the usual religious, subject, sporting and outdoor associations, the following *subject-related associations* could be considered for the development of pupil leadership potential:

(a) Languages: Drama/stage, literary and debating societies, orators' clubs, reading circles, societies or clubs for young authors, poetry-reading clubs and film societies.

(b) Natural sciences: Societies and clubs for oceanography, astronomy, horticulture, photography, botany, zoology and ecology; chess clubs.

(c) Commercial subjects: Accountants' clubs, stock market, computer clubs, bureaus for economic guidance, secretarial clubs.

(d) Social subjects: Environmental study groups, explorers' clubs, debating societies, pupil parliaments, philately clubs, numismatic clubs, contemporary history societies, restoration societies, topical events clubs.

(e) Practical/aesthetic subjects: Gourmet clubs, catering clubs, flower arrangement clubs, embroidery clubs, first-aid leagues, school choirs, musical appreciation societies, art appreciation societies, folk-dancing clubs, school orchestras, ballet clubs, modern dancing clubs.

(f) An association for high-profile leaders: Excellent opportunities ties for directed leadership development can be built into an association for identified socially gifted pupils, elected or nominated leaders, identified potential leaders and pupils who have already given proof of leadership ability. Such an association can foster the development of school leaders, can serve as an advisory body and can create special leadership opportunities for pupil leaders. It can also initiate and present leadership training programmes.

8.9.6 A magnet class for leadership development

Along the same lines as a magnet class for intellectually gifted pupils, a magnet class for the development of gifted pupils with leadership ability can offer structured development opportunities to identified potential leaders among the pupils, the socially gifted, elected or nominated leaders and high-profile leaders. *The curriculum for leadership development in a class and subject context can also be used in this teaching situation.* Such occasions should be characterised by enhanced study, higher standards, greater self-reliance and a more practical application of knowledge and skills. Peer group teaching and contact with community leaders can be maximally achieved in such a class.

Candidates from this group can be nominated or elected to leadership positions or as school representatives. The school should recognise completion of such a course or programme by way of a merit list, certificate, colours, a diploma ceremony or special mention in school publications and testimonials.

8.9.7 The prefect system at primary and secondary schools

The prefect system presents a further opportunity for gifted pupils in particular to develop leadership potential.

However, schools have a special task in keeping a watchful eye over the prefect system. These leadership positions should never be simply a matter of maintaining discipline: they should reflect a true leadership characteristics. If high-profile leaders are identified at an early age and trained to accept leadership, they can develop into pupil leaders who, as prefects, can demonstrate effective leadership to other pupils.

A prefect system is recommended for the primary school as well, so that leadership potential can be identified and developed at an early age when the pupil is still highly receptive to teacher guidance. School activities can consequently be greatly enhanced and publicised among parents and the wider community. The training given to primary school pupils can benefit both the secondary school and society at large.

The following personality traits should be sought in primary and secondary school prefects: leadership ability, integrity, good human relations, conscientiousness, self-discipline, exemplary behaviour, loyalty to the school, an ability to maintain discipline, willingness to serve and academic excellence.

A prefect system should be structured in such a way that prefects really are allowed to lead and their own personal development is promoted. The following are appropriate goals and areas of activity for prefects:

* Improving relations between pupils, between pupils and prefects, prefects and staff, pupils and staff and society;

* involving pupils in meaningful activities;

* providing a forum for pupils' opinions and contributions;

* creating opportunities for the exercise of leadership and preparing pupil leaders for their leadership task;

* creating opportunities for other pupils to take the lead;

* contributing to the effectiveness of the school administration;

* expanding the school's cultural organisations;

* maintaining the school tradition, promoting pride in and loyalty to the school, enhancing the school's image;

* fostering respect for rules and order and promoting wholesome discipline;

* fostering patriotism;

* contributing to the moral and religious development of pupils.

An ideal prefect system could function according to the following guidelines:

* The general objectives of a prefect system should be in line with a specific philosophy and world view.

* The general objectives of a prefect system should be in line with educational and school policy.

* There should be a contact person for the prefects on the teaching staff who meets certain requirements.

* The prefect system should enjoy the full support of the principal, contact teacher and all other teaching staff.

* Consideration should be given to training potential prefects in an association for high-profile leaders.

* Potential prefects should be properly and objectively identified.

* Prefects should be chosen according to a system in which the pupils' views are respected.

* Prefects should have status.

* Prefects should have their own common room.

* The aims and activities of prefects should be meaningful and should be put in writing.

* Prefect activities should cover a wide range of leadership activities.

* The system should function by way of subcommittees.

* Individual prefects should be given optimal opportunities to exercise leadership.

* There should be regular meetings of prefects (fortnightly, for example).

* Prefect activities should be evaluated.

* Prefects should be properly prepared for their task.

* Prefects should contribute to the wider development of pupil leadership in the school.

8.9.8 Leadership development through school sport

School sport, which provides a less formal social climate than the traditional teaching-learning situation, presents ideal opportunities for the growth of pupil leadership and of trust relationships between teachers and pupil leaders. Health and fitness as well as contact with others are essential leadership requirements.

The sports leader should not be restricted to administrative and disciplinary functions but should also be involved in the handling of apparatus, coaching, record keeping and the like.

A sports leader should not just be elected and then thrown in at the proverbial deep end: proper training is essential. Apart from leadership theory, such training should also provide for practice in exercising leadership skills.

In secondary schools the sports leader should take part in the design and presentation of the leadership development system. The formation of attitudes and the development of techniques and skills are an indispensable part of such a programme.

Even in the primary school, sports leaders should be given responsibility in respect of control, coaching and record keeping.

8.9.9 Extramurally centred leadership development: head prefects

Every year head prefects from secondary as well as primary schools should receive training in their leadership task. Education departments should take the lead by approving and co-ordinating such projects. The co-ordination could be done by an expert educational planner. Training should preferably take place on a decentralised and team basis. (A leadership development model for head prefects of secondary schools has been successfully implemented in the Cape since 1977.)

8.9.10 Leadership development outside the school context: high profile leaders (Standards 6 - 10)

A high-profile leader can be defined as a person who, by virtue of exceptional natural gifts, can *influence* people to such an extent that his presence in a group makes a perceptible difference, particularly when the group has to co-operate towards achieving a common goal.

It is assumed that the training of leaders is both possible and necessary and that such training will be determined by a particular philosophy and world view.

- Leadership training for pupils is an educational task.
- Leadership training is a long-term project.
- Educators should keep a low profile.
- Leadership means service.
- Leadership calls for action.
- Leadership presupposes faith, positive convictions and values, a sense of vocation and a clear stance on issues.
- Leadership calls for *humility*.
- Leadership training calls for an *openness* to pupil contributions.
- Potential high-profile leaders must be identified.

8.10 RECOMMENDATIONS: CURRICULUM DESIGN FOR SUBJECTS, GROUPS OF SUBJECTS AND LEADERSHIP DEVELOPMENT

The guidelines given for the design of curricula in respect of subjects, groups of subjects and leadership development are linked with the ways in which gifted pupils manifest their gifts. The guidelines should therefore be taken into account in designing curricula for gifted pupils.

It is recommended that

* subject curricula should be developed on a national basis by a central curriculum development service;

* the central curriculum development service should follow the guidelines in respect of subjects, groups of subjects and leadership development in the design of subject curricula;

* the central curriculum development service should involve experts in education for gifted pupils;

* the same guidelines should be followed in designing curricula for individual gifted pupils within a general curriculum;

* research and subjects curriculum development for gifted pupils should continue in a co-ordinated and rational manner.

8.11 CONCLUDING REMARKS

The above are broad guidelines for the design of curricula for subjects, groups of subjects and leadership development. It is essential to involve experts in such activities. The guidelines for subject curriculum design can be safely followed, but there is a need for continued research.

CHAPTER 9

THE TRAINING OF TEACHERS FOR GIFTED PUPILS

9.1 INTRODUCTION

The growing awareness of the special demands that gifted pupils make on teaching and education has prompted the following question: What qualities should teachers of the gifted have?

Long lists have been drawn up giving the positive personality traits that teachers of gifted pupils should have. However, these teachers should also be properly trained for their important and complex task.

9.2 CURRENT SITUATION IN THE RSA WITH REGARD TO THE TRAINING OF TEACHERS FOR GIFTED PUPILS

9.2.1 A study of the current situation regarding the training of teachers for gifted pupils

In order to assess the present situation with regard to the training of teachers for gifted pupils in the RSA, Wallace sent a questionnaire to universities and colleges of education. Questionnaires were completed and returned by 10 universities and 18 colleges of education.

9.2.2 University training of teachers for gifted pupils

Only one of the ten universities that responded to the questionnaire offers a special course leading to a qualification in the teaching of gifted pupils. The other nine universities do not intend to offer any specialist diploma or degree of this kind in the near future.

Five of the universities have appropriate themes relating to the teaching of gifted pupils, but these form part of the syllabi of other teacher-training graduate or diploma studies.

9.2.3 College training of teachers for gifted pupils

None of the 18 colleges of education offers a special diploma in the teaching of gifted pupils, although about 60 % of the colleges have appropriate themes relating to the teaching of gifted pupils in their syllabi for the existing education diplomas.

9.2.4 Other findings based on the questionnaire

In die RSA the training of teachers for gifted pupils is in its initial stages at present. Specific themes relating to giftedness were introduced in syllabi as recently as 1980. There are also a number of universities and colleges where innovation in this regard is now in the planning phase.

There is consensus among respondents that only selected students should be admitted to courses specialising in the teaching of gifted pupils. Among the criteria recommended for the selection of these students, which, taken together, determine the suitability of candidates, are the following:

- Academic and professional ability;
- teaching experience;
- personal qualities, such as an interest in gifted pupils, enthusiasm, the ability to get through to gifted pupils, organising ability, creativity and originality.

About 80 % of the respondents consider that the training of all teachers should to some extent equip them to teach gifted pupils.

Teachers should at least be able to identify gifted pupils, interview them and work out enrichment programmes for a specific gifted pupil.

From the responses to the questionnaire it appears desirable that some teachers should have a specific qualification for teaching gifted pupils, so that they will, for example, be able to make the necessary arrangements regarding the identification of such pupils, to develop co-ordinated programmes for them to improve their learning attitudes, to plan enrichment programmes for them and to guide them towards self-discovery.

9.2.5 Concluding remarks on the training of teachers for gifted pupils in the RSA

Although the training of teachers to improve their ability to meet the special needs of the gifted learner is a relatively new idea in the RSA, it appears that progress in this respect is nevertheless being made. Training institutions have commenced or are engaged in planning with a view to better equipping teachers for this area of education. Training institutions should, however, take due account of the framework of education provision if their planning in this regard is to be effective.

9.3 THE TRAINING OF TEACHERS FOR GIFTED PUPILS IN THE USA

9.3.1 Introduction

As the training of teachers for the teaching of gifted pupils in the RSA is in its initial stages, it is necessary to refer briefly to some examples of training programmes in the USA, where much has already been done in this connection.

9.3.2 Some examples of training courses in the USA

The training model used and the training content offered at the US universities mentioned below were analysed and are considered in Paragraphs 9.4 to 9.6, in which the proposed model for the training of teachers for gifted pupils in die RSA is also described: University of South Florida; University of Georgia; Johns Hopkins University, Baltimore; Columbia University, New York; State University of Connectiout Storrs; and College, Baltimore; Appalachian State University, Boone; University of Southwest Louisiana.

9.3.3 Major features of the training of teachers for gifted pupils in the USA

(i) Specialised university courses that prepare teachers for the teaching of gifted pupils are fairly common in the USA.

(ii) Universities also offer short in-service training courses.

(iii) Courses are structured to allow for individual differences between students - the syllabi therefore offer options.

(iv) Internships, practical work and seminars are required.

(v) Although the training has a theoretical base covering the essential aspects, it has a strong practical and career bias. Renzulli (1978: 1) says in this regard: Depending upon each student's background and professional objectives, the program is designed to train persons for roles as teachers, pupil personnel specialists, program development specialists and directors or co-ordinators of school programs for the gifted and talented.

(vi) Students are expected to

- acquire the necessary knowledge;
- demonstrate their ability to apply that knowledge;
- reach an advanced level of proficiency and have the necessary skills for the teaching of gifted pupils.

(vii) As part of their training, students are excepted to do research, and in this way the literature is expanded, initiatives are evaluated, creative work is done and scientifically based innovation is assured.

9.3.4 Evaluation

Every education system is unique and has its individual or particular character, but through a comparison which places the comparable side by side, which critically examines the unfamiliar and identifies the elements that are worth recommending, existing programmes can be meaningfully adjusted.

From this brief survey it is evident that it is possible to learn from the USA about the initial and further training of teachers for gifted children. For a more detailed account and evaluation of programmes for the training of these teachers, the reader is referred to the report by Gouws (1984: 71-112).

9.4 A PROPOSED MODEL FOR THE TRAINING OF TEACHERS FOR GIFTED PUPILS AT SECONDARY SCHOOLS (JUNIOR AND SENIOR SECONDARY PHASE OF POSTBASIC EDUCATION) IN THE RSA

9.4.1 Desirability of training secondary school teachers for gifted pupils

The desirability of a school system in which also gifted pupils are catered for was pointed out in the preceding chapters. That teachers should be trained to teach these pupils within the school system is absolutely essential. Most of the universities in the RSA that participated in the investigation (Wallace, 1983) are in favour of secondary school teachers being trained for this purpose.

Passow (1983: 42-43), in his study *A universal view of gifted and talented programs*, says that teacher training for gifted pupils leaves much to be desired: "Teacher education for working with gifted and talented pupils either at a pre-service or in-service level is not a widespread practice. Formal, structured teacher education programs for preparing teachers to work with the gifted are probably best developed and certainly most numerous in the United States. The USA is possibly the only country which has, in some of the states, special licensing or certification of teachers for the gifted.

"The NAGC survey in England and Wales indicates that a good proportion of the teacher preparing institutions subscribe to the principle that teachers of the gifted need some preparation but not all of those have courses available. Some colleges and departments of education have a special interest and expertise in this area leading, in some instances, to the award of certificates or diplomas in the teaching of gifted children. Compared to other areas of special education, specialized programs for teachers of the gifted in countries around the world seem to be rare."

9.4.2 The connection between definition, categorisation, education provision and curriculum development on the one hand and teacher training on the other

The research and training functions of universities differ radically if viewed in the context of everyday reality. As regards its research function, the university is not at all system bound or practice bound; on the contrary, the university's task is to take the lead and point the way in new directions on the basis of its research. In its training function, however, the university should take due account of society's needs. Also, as regards the training of teachers, the university is required to prepare professionals for specific educational practice. The same applies to the training of teachers for gifted pupils.

Not only should the university's training pattern in this regard be backed up by research on a continuous basis - it should also take account of the education system's definition, categorisation and procedure for the identification of gifted pupils, as well as the particular school and teaching curriculum. For instance research results and education practice procedures determine the curriculum content for teacher training. Likewise, the university will have to take account of the main forms of provision in education practice, since these are indicative of the particular supply of and demand for teachers, which in turn determine the scope of training at institutions of tertiary education.

There can be no doubt that there is a significant relation between the components mentioned above. In its training of teachers for gifted pupils, the university will on the one hand have to take the lead by virtue of its research function while on the other hand also taking into account such matters as definition, categorisation, identification, modes of education provision and curricula for gifted pupils in education practice.

9.4.3 The problem of modular subject matter in existing courses versus specialised diplomas or degrees

The question whether the universities should build modules for the education of gifted children into existing courses in education for all prospective education students or whether they should introduce specialised diplomas or degrees to be taken by certain teachers only, cannot be answered satisfactorily unless account is taken of the system of education provision concerned. In other words the degree of specialisation or sophistication of the school system as regards education for the gifted child will have a significant influence on training needs.

In the study of universities in the RSA (Wallace, 1983), none of the ten universities concerned stated that specialised diplomas or degrees in gifted-child education were awarded in the basic teacher-training phase. Only one university has an M.Ed. degree course that offers advanced post-graduate opportunities in this regard.

It would appear, therefore, that in the existing courses for all prospective teachers preference is given to the concept of modules for the education of gifted pupils in the training of secondary school teachers. This is at present being done to a greater or lesser extent at most universities in the RSA, but there is a need to improve these training opportunities at the universities (Wallace, 1983).

Specialised or specially oriented diplomas or degree courses in the basic training of teachers can be considered only if there is a real need for special teachers in an education system in which special schools, magnet schools, magnet classes, etc., are provided for gifted pupils. If, therefore, the concept of magnet classes in a number of subjects within the ordinary provision of staff (i.e. the Renzulli model) is accepted, consideration should also be given to the introduction of specially oriented diploma or degree courses in basic training.

9.4.4 The need for research backing for the training of teachers for gifted children

It is essential that the training of teachers for gifted children in the secondary school should be backed up by continuous research.

9.4.5 A proposed model for the training of teachers to conduct gifted child education at secondary schools

(1) Proposed main forms of education provision

It is assumed that the main forms of education provision for gifted children in secondary schools are the following:

(i) Enrichment programmes in all schools and subjects;

(ii) accelerated studies in subjects (see also Point vi: Advanced placement);

(iii) one-standard acceleration in the secondary school (two standards in one year);

(iv) magnet classes: optional subject magnet groupings in some subjects within the ordinary staffing and time-table provisions;

(v) magnet schools in certain subject fields or areas (for example art, music and ballet);

(vi) special schools and centres for accelerated studies;

(vii) extracurricular centres;

(viii) summer schools/winter schools and vacation schools for gifted pupils at institutions of tertiary education or at schools (self-organised) or at extracurricular centres;

(ix) advanced placement of gifted pupils at universities.

(2) **Implications of the abovementioned forms of education provision for teaching practice and teacher training**

These forms of provision imply the following needs with regard to teaching practice and teacher training:

(i) Enrichment programmes: All teachers should be familiar with the didactic treatment of gifted pupils. Modules for gifted child education should feature in all basic or initial teacher training.

(ii) Subject magnet grouping: Only a few teachers are needed to deal with specialised magnet groups in a limited number of subjects. This need can be met by means of advanced postgraduate courses (for example specific B.Ed. subject courses, an M.Ed. course or other forms of postgraduate study) at universities, further education diplomas and specifically designed in-service training courses (see Par. 9.6, 9.7 and 9.8). If, however, the concept of magnet classes is accepted in certain subjects within the ordinary staffing provision (i.e. the Renzulli model), it will be necessary to introduce specifically designed diploma and degree courses in basic training at a few universities.

(iii) Standard acceleration: All teachers should be familiar with the didactic treatment of gifted pupils and with accelerated education within the ordinary teaching-learning class situation. This challenge to teaching practice means that modules for gifted child education should feature in all basic or initial teacher training.

(iv) Magnet schools: The training of teachers for specialised work in magnet schools is already receiving attention in the RSA.

(v) Summer schools/Winter schools/Vacation schools or extracurricular provision: A limited number of staff members are needed.

These needs can be dealt with in the same way as in the case of magnet groupings (see Par. 9.4.5(2)(b)).

(vi) Advanced placements: This form of provision does not require additional teachers, but it should be considered in conjunction with subject magnet grouping (Par. 9.4.5(2)(b)) and accelerated studies in subjects (Par. 9.4.5(2)(c)) in secondary schools, and also in conjunction with special schools and centres for accelerated education, which are organised on a basis of advanced placement. Advanced placement will, however, make greater demands on teachers' academic knowledge of their subject. Even if pupils are placed at universities for a subject or subjects, it is likely that they will consult teachers for assistance in their studies.

The main forms of provision mentioned above should determine the following aspects of teacher training for gifted children in secondary schools:

- The nature of the degree or diploma course;
- the content of the degree or diploma course;
- the number of teachers in training (see Par. 9.4.2).

(3) Proposed nature or structure of training

In the light of the foregoing proposed main modes of education provision for gifted pupils in secondary schools, it is recommended that no specifically designed or specialised degrees or diplomas should be offered in the basic or initial training of teachers. Modules for gifted child education should, however, feature in relevant subject courses in all degree or diploma courses for the training of secondary teachers.

(4) Proposed syllabus content for the training of all secondary school teachers for gifted children

The syllabus that follows relates to the training of all secondary school teachers regarding the handling of enrichment programmes in all subjects and at all schools, increasing teachers' awareness of gifted pupils and, through this special education provision for gifted children, raising the general standard of education for all pupils.

Thematically this can be accommodated in an integrated education or pedagogics course or in a multidisciplinary course.

(a) Theme: education for gifted pupils

(i) An international perspective on education for gifted pupils.
(ii) A national perspective on education for gifted pupils.
(iii) Definition and categorisation of gifted pupils.
(iv) Identification of gifted pupils.
(v) Forms of education provision for gifted pupils.
(vi) Curricula for gifted pupils.
(vii) The gifted underachiever.
(viii) The gifted handicapped child.
(ix) Guidance for gifted pupils and their parents.

(b) **Theme: process aims for gifted pupils**

It can be laid down as general policy that education for gifted pupils should at no stage concentrate exclusively on academic content - often the pupils will be able to cope with this on their own. It is far more important that they should develop the abilities, skills and techniques they will need if they are to realise their potential. The balanced development of potential involves the development of the following skills: ability to concentrate; dedication to a task; emotional balance; the senses; speech; the physical self; intellectual capacities, and imagination. None of these skills, which are elaborated on below, should be developed at the expense of any of the others.

1) **The development of powers of concentration**

2) **Techniques of and capacities for socialisation include the following factors:**

Socially acceptable behaviour; self-discovery and self-acceptance; interpersonal relationships in pairs, in small groups and in large groups.

The child should learn to cope with all roles, not just that of being a leader.

3) **Reading techniques**

All kinds of reading techniques, for example speed reading, comprehension reading and pre-reading.

4) **Study techniques**

5) **Research techniques, including the following:**

The scientific method; the collection of material; the treatment of material and the formulation of results.

6) **Argumentation comprises the following:**

Logical thinking; exercises in reasoning covering all facets of argumentation, and presenting an argument in a variety of forms.

7) **Communication**

Effective communication in a variety of situations, due regard being given to listening techniques and verbal and non-verbal communication.

8) **Computer literacy**

9) **Creativity**

Here creativity is regarded as a means of developing the child's different capabilities to their full potential through divergent thinking. Creativity should not be confused with artistic talent.

(c) **Theme: intellectually gifted pupils**

(i) Profile and characteristics of intellectually gifted pupils.
(ii) Learning characteristics of intellectually gifted pupils.
(iii) Particular forms of education provision for intellectually gifted pupils.
(iv) Particular goals for intellectually gifted pupils.
(v) Particular subject matter for intellectually gifted pupils.
(vi) Particular teaching methods for intellectually gifted pupils.
(vii) Particular methods of assessing intellectually gifted pupils.
(viii) Particular subject didactics for intellectually gifted pupils.
(ix) Leadership development of intellectually gifted pupils.

(d) **Theme: gifted pupil leaders**

(i) Profile and characteristics of gifted pupil leaders.

(ii) Learning characteristics and qualities of gifted pupil leaders.

(iii) Particular forms of education provision for gifted pupil leaders.

(iv) A curriculum for gifted pupil leaders in relation to *inter alia* leadership as a social phenomenon; leadership theories, functions and styles; group-dynamic aspects of leadership; leadership skills, such as goal formulation, problem solving, decision making, morale building, conflict management, communication in groups, interviewing, public speaking, report writing and evaluation, and specific leadership positions such as chairmanship, membership of committees, pupil counsellorship and captaincy.

(e) **Theme: creativity and giftedness**

(i) Profile and characteristics of creative gifted pupils.
(ii) Qualities of creative gifted pupils.
(iii) Particular forms of education provision for creative gifted pupils.
(iv) Particular goals for creative gifted pupils.
(v) Particular subject matter for creative gifted pupils.
(vi) Particular teaching methods conducive to creativity.
(vii) Particular methods of assessing creative gifted pupils.
(viii) Creativity within a particular subject didactic context.

(f) **Theme: management of educational programmes for gifted pupils**

(g) **Theme: subject didactics**

Educational students preparing for a career in secondary school teaching will require thorough subject-didactic preparation in order to enable them to cope with enrichment programmes in their particular field of specialisation in a situation where they have gifted children and other pupils in the same class. Apart from the subject-didactic curriculum design factors, it will be necessary to give attention to the subject-specific treatment of aspects of forms of education provision (see Par. 9.4.5(1) and (2)).

(h) Teaching practice (practical teaching)

Education students preparing for a secondary school career should be afforded the opportunity, in the teaching practice provided at both the training institution and the school, of applying theoretical knowledge in practice, of testing designs or programmes for the teaching of gifted children and of gaining experience in the didactic treatment of gifted pupils.

9.4.6 Concluding remarks

The initial or basic training of teachers for gifted children will be determined by the modes of education provision decided upon. In the training provided this topic should, however, at least be dealt with in modular fashion in order to stimulate enrichment and to increase sensitivity to gifted child education. In this regard the basic training of teachers should also be planned in conjunction with such matters as in-service training, further training and post-graduate studies.

9.5 A PROPOSED MODEL FOR THE TRAINING OF TEACHERS FOR GIFTED PUPILS AT PRIMARY SCHOOLS

9.5.1 Introduction

The approach to gifted child education at primary school level differs radically from that at the secondary school level, since the primary school teacher is responsible for all (or nearly all) the instruction that is given to a particular class. Here the teacher is therefore faced with the problem of teaching one or two gifted pupils in her class. For this reason it is essential that all primary education students acquire at least a certain level of knowledge and proficiency in dealing with gifted pupils. All colleges of education should therefore introduce a giftedness module at third-year level (for all students) and preferably also an optional full course at fourth-year level.

Since approximately 1980, time (about 20 hours a year) has in fact been allowed in certain colleges of education students' final year to equip them to teach gifted pupils. In the HDE syllabi for both junior primary and senior primary teachers attention is given (in Educational Psychology, Didactics or in the methodology of a particular subject) to appropriate themes relating to the teaching of gifted pupils.

9.5.2 A proposed curriculum for an optional full course in gifted child education with a view to a four-year Higher Diploma in Education (HDE)

(1) Module in the third year of study

The concept of giftedness should be introduced at third-year level as a module in the course syllabus for all education students. The following merit emphasis: the meaning of giftedness; ways of becoming aware of education provision; the problems associated with education for gifted pupils, and certain guidelines on what can be done and is in fact being done in South Africa.

(2) Optional course during the fourth year of study

As regards the optional course (in other words, about eight forty-minute periods a week) for selected students, the choice of candidates should depend on the extent to which they display the following qualities:

- accomplishment and maturity
- divergent thinking ability/skills
- comprehension ability
- perseverance
- interest in gifted child education
- positive attitude towards gifted pupils

(3) Topics to be included in the curriculum

(a) Philosophical and historical factors

(i) A critical discussion of the philosophical ideas underlying concepts such as equality of opportunity, special education, exceptional children and elitism.

(ii) The history of education for the gifted child.

(iii) The present position regarding education for gifted children in certain selected countries, as well as in the RSA.

(b) Aspects of educational psychology

(i) Relevant aspects of cognitive development, for example language, numeracy and the concept of readiness.

(ii) The various types of human ability.

(iii) Factors influencing the development of ability.

(iv) Self-image and self-actualisation.

(v) Individual differences, with reference to intelligence, personality and achievement.

(vi) Psychological and educational assessment:

- the role of the educational psychologist
- the role of intelligence tests
- the role of other tests
- teacher observation

(vii) Counselling (guidance) (parents, pupils and teachers).

(viii) Case studies.

(ix) The identification of gifted pupils (different approaches).

(x) Dealing with problems that gifted pupils experience.

(c) **The nature of giftedness**

(i) The following concepts: giftedness and talent; being gifted; exceptional ability; underachieving.

(ii) Type of giftedness.

(iii) Typical characteristics.

(iv) Sociological aspects of learning aims and choice of mode of provision.

(v) Taxonomies of educational aims, for example Bloom's taxonomy.

(vi) Teaching methods for gifted pupils.

(d) **Types of education provision**

(i) Self-study and open-ended learning.

(ii) Individualisation.

(iii) Acceleration.

(iv) Grouping.

(v) Enrichment/Extension.

(vi) Pull-out systems.

(vii) Magnet classes/Magnet schools.

(viii) Special schools/Extracurricular centres.

(ix) Principles of programme design.

(x) Co-ordination of programmes for gifted pupils with ongoing school activities.

(xi) Special and/or itinerant teachers.

(xii) Mentors.

(xiii) Students should specialise in the methodology of one of their major subjects (subjects taken at second-year as well as third-year level) with a view to teaching the subject to gifted pupils.

(xiv) Counselling of parents, pupils and teachers in connection with the provision of education for gifted pupils.

(xv) Curriculum for leadership objectives.

(xvi) The instruction referred to above should take account of the various education departments' approaches to education for the gifted child.

(e) **Practical teaching**

(i) This should preferably take place in a school where provision has already been made for gifted pupils.

(ii) Experience should be gained in one or more of the following:

- an individualised programme
- tutoring
- group pull-out programmes
- special classes and schools
- the use of self-study techniques and the resource centre

(iii) Practical teaching should include an on-going case study as well as a block period of teaching. During this period as much time as possible should be spent on teaching gifted pupils.

(4) Summary

The standard of the education provided for the gifted pupils in the RSA could be considerably improved if it could be possible to ensure that all Education students had the necessary knowledge and skills to accommodate gifted pupils in the ordinary classroom and if further provision could be made for students who had the aptitude for and were interested in specialised training to take the lead in providing meaningful programmes of study for gifted pupils.

9.6 A FURTHER EDUCATION DIPLOMA COURSE FOR TEACHERS OF GIFTED CHILDREN

(1) Introduction

Since, during the initial training of teachers, it is hardly possible to provide adequately for the realities of the teaching situation in every respect, it appears necessary to provide for certain specialised fields in education by means of a "further education diploma course".

In today's world the continued training of serving teachers after their preservice or initial training is already common practice.

(2) Example of further training of teachers

In co-operation with the University of South Africa, the College of Education for Further Training (CEFT) in Pretoria offers training that leads to the Further Diploma in Education (FDE) in various fields of specialisation.

Today the FDE is a sought-after qualification, not only because continued training is necessary to keep teachers equipped for their complex tasks, but also because of teachers' growing interest in a particular field of education once they are in practice. From the large number of teachers wishing to receive further training and retraining (2 560 teachers registered with the CEFT in 1983) it is clear that the CEFT is meeting a need for training.

(3) **Proposed curriculum for a further diploma in education for the gifted child**

It is recommended that the following themes be included in a curriculum for a further diploma in education for the gifted child:

(a) **First year of study**

(i) Psycho-pedagogic and sociopedagogic aspects of giftedness
(ii) Diagnostics of giftedness
(iii) Didactics of gifted child education I

(b) **Second year of study**

(i) Agogics (educational guidance)
(ii) Didactics of gifted child education II (CEFT 1983: 1)

(4) **Note**

The themes that will be studied in each subject are selected in such a way that teachers who have completed these studies should be able to give guidance in connection with education for gifted pupils.

The envisaged diploma course will represent an attempt at further preparing professionals for a specific field of education practice.

9.7 A PROPOSED IN-SERVICE TRAINING STRATEGY TO IMPROVE THE QUALIFICATIONS OF TEACHERS OF GIFTED PUPILS

(1) **Necessity of in-service training**

(i) Since until quite recently the initial teacher training courses made only limited provision for the teaching of gifted pupils and since many schools are now trying to accommodate gifted pupils in more effective ways, in-service training programmes have become indispensable. It is therefore essential not only for teachers who have completed their studies, but also for school principals, inspectors of education, subject advisors and particularly teacher-psychologists, school psychologists and clinic staff, to be trained for this purpose.

(ii) Even if, during their diploma or undergraduate and postgraduate training, teachers also receive theoretical orientation in teaching gifted pupils, education practice often poses special problems as regards the planning, implementation and presentation of instructional programmes - problems that can be remedied only by in-service training courses.

(iii) Education for gifted pupils is a relatively new development. In a context of rapid change, the store of knowledge is constantly being added to and new programme material is being developed. Through in-service training courses for teachers, educational innovations in subject matter as well as approaches and educational strategies that are relevant to the teaching of gifted pupils have to be passed on systematically.

(iv) In one way or another, most teachers are involved in identifying gifted pupils, or they teach them or are in charge of extramural activities in which these pupils take part. If an educational programme for gifted pupils is to be run successfully, all the teachers at a school should eventually be involved in an in-service training programme.

(2) Conditions for successful in-service training

To ensure the success of a training programme, a needs determination should be carried out, bearing in mind the following:

(a) Pupils' needs

In determining the in-service training needs it is necessary, for example, to ascertain

- whether schools have reliable identification instruments that will ensure effective identification of gifted pupils;
- the nature and extent of giftedness in the schools under a particular education department and the schools or areas where the greatest concentrations of gifted pupils occur;
- the classroom needs of the gifted pupils and the extent to which the existing teaching programme meets their educational needs.

(b) Staff

It is necessary to ascertain

(i) the general attitude of the teachers to education for gifted children and the extent of their background know ledge and experience;

(ii) the school principals' attitude to this kind of education;

(iii) whether there are enough suitable teachers who have the required qualities for gifted child education;

(iv) the role to be played by inspectors of education, subject advisors, school guidance officers and other auxiliary services within the educational programme for gifted children.

(c) School organisation and provision strategies

It is, for example, necessary to determine

(i) whether the departmental policy makes special provision for gifted pupils, for instance in the form of special schools or classes, magnet schools, extracurricular centres and acceleration (including acceleration in subject studies), so that the parameters for in-service training can be established;

(ii) whether there are possibilities at school for magnet classes, pull-out, team teaching, project teaching, etc;

(iii) whether there are opportunities for enrichment, for example whether schools have adequately stocked resource centres;

(iv) what provision there is for additional staff, for example mentors, co-ordinators and itinerant staff;

(v) whether there are enough staff available for the purpose of testing.

(3) **Course or programme content**

The course or programme content for in-service training courses should be planned on the basis of carefully identified needs relating to those matters that have been discussed in the preceding paragraphs and should be aimed at the problems experienced in practice.

Apart from the specific problem areas identified for in-service training, it is evident from the literature that the following areas should receive attention in an in-service training programme:

(i) The nature and definition of giftedness.

(ii) The identification of gifted pupils and their educational needs.

(iii) The essential nature of education for gifted pupils.

(iv) The demands made on teachers of gifted pupils.

(v) The design of a curriculum or instructional programmes for gifted pupils.

(vi) Teaching strategies and learning models for the teaching of gifted pupils in the ordinary classroom context.

(vii) Teaching aids and the use of physical facilities in schools.

(viii) The assessment and promotion of gifted pupils.

(ix) Counselling of gifted pupils and their parents.

(4) **Planning framework**

The planning framework organisational design of in-service training is determined by the needs of the target group concerned as well as by the level at which gifted child education has been developing in a particular department.

The following steps are regarded as necessary in a structure for effective in-service training:

(i) Needs identification.

(ii) Training of in-service trainers.

(iii) General orientation of school principals, inspectors of education, subject advisors and members of the psychological service.

(iv) General orientation of teachers.

(v) Intensive in-service training courses for teachers, co-ordinators and subject specialists concerned with gifted child education.

(vi) Informal or formal follow-up sessions or follow-up courses, conferences and workshops organised by teachers' centres or inspectors of education and subject advisors.

(vii) The formation of study groups that can exchange programmes, knowledge and information on a regular basis.

The training of the various groups of people could take the form of workshops, seminars, conferences, lectures, vacation courses, courses (during school time) of a few days' duration, weekend courses, visits to experimental schools, and demonstrations. Serving teachers would also be able to take more structured courses by correspondence or by means of after hours degree studies and continuing training.

(5) Presentation strategies

At present there is a wide range of presentation strategies from which in-service training courses can be selected. It has recently become evident that a strategy that has the greatest practical value, and is therefore potentially the most successful, is that of conducting workshops for which preparatory reading is sent to the target group in advance and at which concise theory inputs are provided and those attending the workshop work out practical designs.

Some presentation strategies that can be used for in-service training are the following: formal lectures, talk sessions, simulation, demonstration lessons, problem-solving sessions, decision-making sessions, group discussion, discussion of case studies, observation and evaluation of educational programmes for gifted pupils, curriculum and lesson design, and evaluation of teaching strategies.

Besides the ordinary audio-visual equipment used, the following can serve as important aids to presentation strategies: films, video tapes, publications, specimens of programmes, experts in various subjects, as well as hints by teachers of gifted pupils.

For the greatest measure of success, presentation strategies and teaching aids should be selected taking due account of the programme content and the target group, in addition to which the aids should be in keeping with the teachers' instructional needs in the classroom.

(6) Scheduling of in-service training programmes

The time to be devoted to the respective in-service training programmes will be determined by such factors as the comprehensiveness and degree of difficulty of the programme, the aim of the course, the teachers' professional qualifications and experience in education for gifted pupils, and the type of training model chosen.

Initial courses should be followed up with further shorter, possibly less formal, courses aimed at solving practical problems, filling in gaps in the teachers' knowledge and providing back-up. The length of the intervals will be determined by the teachers' needs. Education departments will have to be sensitive to these needs if they are to prevent programmes embarked upon with great enthusiasm losing momentum and eventually producing negative results.

(7) Evaluation of in-service training programmes

As with any system, it is necessary to evaluate the effectiveness of in-service training programmes and to use the feedback in the planning of future programmes. It may in fact be necessary to begin with a pilot course to establish in what ways the programme should be modified.

Many of the more modern in-service training seminars have continuous evaluation built into the course planning. Consequently the teachers' opinion of the training can be gauged immediately. It is also necessary, however, to determine how much of the knowledge and insight acquired is put to practical use in the teaching of gifted pupils. Every department has inspectors of education who should give feedback in this regard with a view to further macroplanning.

In-service training programmes aimed at better equipping teachers of gifted pupils for their special teaching and educational task will have to receive constant attention. Such training being of a practical nature, it has the greatest potential for success since it helps teachers to solve the immediate problems involved in education practice.

9.8 POSTGRADUATE TRAINING POSSIBILITIES WITH A VIEW TO GIFTED-CHILD EDUCATION

9.8.1 Introduction

There is ample opportunity for practising teachers in the RSA to improve their qualifications in Education at universities. The curriculum for the B.Ed. degree has undergone several changes since about 1970. Students can specialise in a particular field, and although there is not yet a B.Ed. degree in gifted child education, it is possible to introduce such a course.

The University of Port Elizabeth has introduced an M.Ed. degree course in the education of gifted pupils.

9.8.2 Postgraduate training possibilities

In order to prepare teachers better for this most challenging task, attention should be given to the following recommendations:

(1) B.Ed. General

The subject disciplines taken for the B.Ed. General degree at the various universities coincide to a reasonable extent, although the designations will probably vary.

To provide for the teaching of gifted pupils, it is recommended that different themes relating to these pupils be included in some of the prescribed subjects. For example the subject Psychopedagogics could include themes such as the following: definition of concepts, essential characteristics of the gifted pupil, and strategies for the identification of gifted pupils.

(2) B.Ed. Specialisation: gifted pupils

As universities should contribute more extensively towards the training of teachers for gifted pupil education, the introduction of a field of specialisation in the B.Ed. course is being considered.

Since it has to be a field of specialisation, a more searching and wide-ranging study of the various relevant facets of the gifted pupil will have to be made. The following are examples of the themes that could be included in order to highlight the gifted pupil's educational needs.

(a) Psychopedagogics

Definition of concepts: the essential characteristics of the gifted child insofar as these can be identified, and the necessity of giving special attention to the gifted pupil.

(b) Pedagogics of vocational orientation/School guidance

The identification of the gifted child and various identification models; and educational, occupational and personality counselling for gifted pupils.

(c) Didactics

Differentiation strategies insofar as these can be related to acceptable and recent theories of learning, as well as programme design.

(d) Fundamental pedagogies

The teaching staff and parents' contribution to the education of the gifted pupil.

(3) Master's and doctoral studies in connection with gifted pupils

Apart from the Master's degree course offered at the University of

Port Elizabeth in the education of gifted pupils, selected students at other universities can do research at Master's and doctoral levels in connection with particular aspects of the gifted pupil. Interest in this field has grown considerably, particularly in recent years.

9.9 SELECTION OF TEACHERS FOR GIFTED PUPILS

9.9.1 Introduction

It is obvious that teachers will play a decisive role in the development of gifted pupils' exceptional intellectual and other potential. In this connection Clark (1983: 364, 371) quotes both Renzulli and Whitmore, who reach the conclusion that the teacher is the *key* to success in special educational programmes for gifted pupils. From the preceding parts of this report it is clear that, because of their particular psychological make-up, gifted pupils present teachers with a teaching challenge of a *different* kind. Indeed Clark (1983: 365) concludes that if gifted pupils are to be afforded sufficient opportunities to develop their exceptional intellectual and other potential, their teachers should possess certain characteristics and personality traits. This is a view which, as will be shown, is endorsed by several other researchers.

It was pointed out earlier (see Par. 9.4.5(3) and 9.5.1) that modules in relevant subject courses should feature in all degree or diploma courses for primary and secondary teachers with a view to the general orientation of such teachers in the teaching of gifted pupils. Naturally, education students will not be specifically selected for this kind of training. However, *specialised* training (for example in initial undergraduate and diploma training, advanced post-graduate and diploma training of serving teachers, and in-service training courses) for teachers of gifted pupils already exists, is in the planning stage, or is envisaged. In cases where this training is aimed at equipping students and serving teachers for *classroom practice* prospective candidates should be screened.

However, the selection of teachers for gifted pupils does not appear to be an altogether simple matter. Gallagher (1975: 312) makes the following observation about the characteristics of teachers who achieve maximal development of the potentialities of gifted pupils: "There is probably more nonsense and less evidence dispensed about the needed characteristics of the teacher of the gifted than almost any other single issue." Gearheart (1980: 370) agrees with this view, arriving at the conclusion that as regards the most suitable characteristics of teachers for gifted pupils there are two broad categories of views among researchers. There are those who believe that such teachers *must* display certain characteristics, and there are those who believe that the characteristics of these teachers are largely unknown.

Therefore, although there are divergent views on the characteristics of suitable teachers for gifted pupils, it is possible to get an idea of those characteristics against the background of the relevant literature. Although it goes almost without saying that a prospective teacher of gifted pupils should be an intelligent person and a subject specialist, according to Haasbroek and Jooste (1981: 79) it appears that these criteria are insufficient as qualifications for teachers of gifted pupils. Maker (quoted by Haasbroek and Jooste 1981: 79-80) cites several researchers who show that there are also other personality traits and characteristics of prospective teachers of gifted pupils that are of key importance in ensuring effective teaching. In this connection Maker mentions the following two important characteristics: "The ability to *relate effectively to the particular group* of youngsters one is planning to teach and *an openness to change*."

Schnur (quoted by Haasbroek and Jooste 1981: 80) gives even more weight to these personal qualities by declaring that teachers of gifted pupils can be identified by the following characteristics:

- Sufficiently secure so that they are not threatened by superior ability, performance and creativity.
- Flexible and creative persons.
- Concerned with individual differences.
- Resourceful.
- Motivated to teach the gifted.
- Experienced.

On the basis of an investigation conducted by him, Bishop (quoted by Clark 1983: 369-370) lists the following personal qualities of teachers of gifted pupils as the most important:

- Were more mature, experienced teachers;

- were mentally superior;

- pursued intellectual vocations;

- had high achievement needs;

- pursued intellectual growth;

- showed a more favourable attitude towards students, were sensitive and empathetic;

- were more student centered in their teaching approach;

- assumed a more systematic, orderly and businesslike classroom approach;

- were more stimulating, imaginative, well-grounded and enthusiastic toward the subject and teaching;

- supported special educational provision for gifted students.

9.9.2 Criteria for the selection of teachers for gifted pupils

The importance of certain personal qualities and characteristics in teachers of gifted pupils is strongly emphasised in the foregoing sections. According to research by Cutts and Moseley (1958: 100-101), Gowan and Demos (1964: 391-392), Hildreth (1966: 533-534), Rice

(1970: 283), Bishop (Barbe and Renzulli 1975: 456-457), Bruch and Torrance (quoted by Gallagher 1975: 313), Goodale (Barbe and Renzulli 1981: 378), Haasbroek and Jooste (1981: 81-83), Khatena (1982: 381-387), Clark (1983: 365-374) and Taylor and Van der Westhuizen (1983: 119-120), teachers who should be able to teach gifted pupils effectively display the following characteristics that can be used as identification criteria:

* These teachers are aware of the fact that, unlike teaching other pupils, teaching gifted pupils is going to be more demanding, and they are prepared to meet the demands.

* As they are aware of the nature of gifted pupils' needs, they energetically and enthusiastically support and advocate special education provision for such pupils.

* They have different knowledge of their own potentialities and limitations, with the result that they project a realistic, positive self-image.

* They themselves display the need to achieve, are purposeful in their efforts to achieve and usually do succeed.

* They usually have exceptional intellectual and other personal qualities themselves. They display the ability to develop intellectually on their own and to learn from their interaction with their pupils. In all probability they have chosen teaching as a profession because they need intellectual stimulation.

* Their knowledge is extensive, ranging over many spheres of life and over many subjects, besides which they have specialised knowledge of their own subject and are prepared to increase this knowledge, imparting it to their pupils with enthusiasm.

* They are very energetic and have the ability to encourage pupils in original, creative and critical thinking.

* They have a wide range of interests, displaying, for example, an interest in literature, the arts and the cultural pursuits of the community.

* These teachers promote enquiring habits of thought among their pupils.

  Teachers who encourage such habits of thought can be identified by the following characteristics:

  - They guide their pupils towards questioning the world around them and towards identifying problems.

  - They pose questions that demand additional inputs from their pupils.

  - They offer their pupils the opportunity of coming up with alternative solutions to problems.

- They encourage their pupils to formulate hypotheses.
- They encourage their pupils to substantiate their answers with evidence.
- They supply their pupils with material in order to develop their ideas.
- They are open-minded about new ideas and methods and are prepared to experiment and improvise.
- They radiate so much enthusiasm for life, their life's work and their subject that often they are actually the *spark* of inspiration that enables gifted pupils to actualise their abilities.
- They have great skill in imparting knowledge to their pupils, are able to get them thinking at a high level and are able to guide and motivate them so that they can actualise their abilities to the full. They are successful in doing so witout being prescriptive: they assign responsibility to their pupils and exercise control over them without stifling their initiative or creative gifts.
- They recognise the human dignity of their pupils.

Through their teaching, teachers who recognise the human dignity of their pupils demonstrate their respect for them, and they distinguish themselves in the following ways:

- These teachers *accept* gifted pupils as individuals with unique characteristics and needs.

  Their affinity with these pupils does not derive merely from the fact that the pupils are gifted. They accept gifted pupils for the same reasons they accept other non-gifted pupils.
- They do not disparage their pupils.
- Pupils are afforded the opportunity of stating their views and getting a hearing.
- Group discussions are used to exchange ideas and solve problems.
- They are interested in their pupils' activities and help them where necessary.
- They plan and evaluate activities with the pupils.
- They are prepared to admit their own mistakes.
- They have no misconceptions about the nature of giftedness and know the characteristics and needs of gifted pupils.

- In particular, they are not indifferent to original, creative and critical thinking on the part of their pupils but try to encourage it.
- Their didactic approach is more pupil oriented: they encourage the pupils to take part in class discussions, they take the pupils' views seriously and they become involved in planning programmes and setting goals.
- These teachers do not feel threatened by the exceptional intellectual and other personal potentialities of gifted pupils, but accept this in a positive way.

* They inculcate respect for others among their pupils.

Teachers who teach pupils to respect others and to make them realise that the dignity of others must be acknowledged, can be identified by the following characteristics:

- Socially, they themselves are well adjusted and they get on well with their pupils and other adults (including their colleagues);
- They are prepared to assist pupils in solving problems where this would be bothersome to other teachers.
- They lead class discussions on differences between people and on people's emotional lives.
- They discuss the values, norms and principles by which people live.
- They are willing and able to discuss controversial issues and social relations.

* These teachers encourage their pupils to recognise their own capabilities.

Teachers who give pupils the opportunity of discovering their own capabilities can be identified by the following characteristics:

- They get their pupils to collect their own information on tasks/assignments.
- They afford pupils the opportunity of using educational aids to obtain information and carry out assignments.
- They suggest alternative approaches and methods to pupils who lose interest or become frustrated.
- They give pupils the opportunity of discussing their work/ assignments with the class.
- It can therefore be concluded that these teachers are able to make a key contribution to the gifted pupil's self-develop-

ment, formation of a positive self-concept and self-actualisation.

- They promote a sense of responsibility among their pupils. Teachers who promote a sense of responsibility among pupils can be identified by the following characteristics:
  - They let the pupils themselves analyse problems and obtain information.
  - They let the pupils work independently at tasks in which they are interested.
  - They encourage pupils to formulate and test their own ideas.
  - They allow pupils to evaluate completed assignments/tasks themselves.

According to Haasbroek and Jooste (1981: 84), certain researchers regard the following characteristics of teachers for gifted children as important:

- These teachers should have knowledge of and appreciation for the cognitive, affective and social needs of gifted children.
- They should have the ability to draw up individualised and enriched teaching programmes to meet the educational needs of gifted pupils.
- They should be able to create instructional situations that afford gifted pupils the opportunity to promote their interests, logical thinking, creative abilities, problem solving, self-realisation and self-evaluation.
- They should be able to encourage social awareness and respect for human dignity among pupils.
- They should be able to communicate with other teachers and with the parents of gifted pupils in the interests of these pupils.

Haasbroek and Jooste (1981: 84) are accordingly of the opinion that researchers are agreed that the success of any educational programme for gifted pupils is determined by the extent to which the teachers *have these personal qualities, by their positive attitude to gifted pupils, and by the extent to which the educational authorities show the necessary confidence in them by allowing them to deviate, within limits, from set syllabi and rigid methods* in order to meet the educational needs of gifted pupils.

(3) Possible selection procedures

According to Haasbroek and Jooste (1981: 84) procedures for the selection of teachers for gifted pupils usually fall into two phases. During the first phase of selection, the following points in particular are considered:

- The candidates' academic and professional qualifications;
- The candidates' academic and professional achievements;
- The candidates' careers as class teachers.

During the second phase of selection, each candidate selected on the basis of the above-mentioned criteria is interviewed by a selection committee. The selection committee carefully notes each candidate's personality traits. Some of the criteria used are the following:

- The roundedness and maturity of the candidate.
- The candidate's powers of comprehension.
- The candidate's interests (whether the candidate has a wide range of interests).
- Perseverance.
- Positive attitude to gifted pupils.
- Genuine interest in education for gifted pupils.
- Genuine interest and expertise in their subject.

It is recommended

- that teachers who wish to qualify during their initial undergraduate and diploma training, or who wish to undergo further advanced postgraduate or diploma training in order to qualify to teach gifted pupils, should be selected to ensure that suitable teachers will be available to teach these pupils, and
- that the abovementioned selection criteria and selection procedure should serve as guidelines for drawing up a selection programme.

9.10 RECOMMENDATIONS CONCERNING THE TRAINING OF TEACHERS FOR GIFTED PUPILS

Since it is essential that teachers should be appropriately trained for the education of gifted pupils, various universities and colleges of education in the RSA have begun to evaluate their present courses with a view to possible modification of the existing curriculum. There are, therefore, definite signs of progress in the training of teachers for gifted pupils in the RSA.

With a view to further improving the education of gifted pupils in the RSA, the following recommendations are made:

(i) During their initial training, teachers should be given the necessary grounding to enable them to cope with education for gifted children.

(ii) The training of teachers in this connection should be based on ongoing research.

(iii) The nature and content of the training should take account of specific forms of provision in education practice.

(iv) In basic training, preference should be given to modular subject matter relating to giftedness in existing subject courses.

(v) Basic training should enable every teacher to apply enrichment studies in his particular phase or subject and to handle gifted children together with other groups.

(vi) The syllabi for the modular or specific training should include at least the following as far as content is concerned:

- The definition and identification of gifted pupils;
- an overview of education for gifted pupils;
- information on education provision and curricula for academically gifted pupils, as well as on the didactic handling of such pupils;
- the definition and identification of gifted pupil leaders;
- a definition of creativity and giftedness;
- specialisation in subject didactics;
- training in teaching practice.

(vii) Universities and colleges of education for further training should create opportunities for selected serving teachers to obtain better qualifications in the teaching of gifted pupils, such qualifications to take the form of specialised further education diplomas or appropriate postgraduate studies. The guidelines given in Paragraph 9.8 should be taken into account in planning the training programmes.

(viii) Education departments should continue in-service training courses for the education of gifted children where such courses already exist, or initiate such courses where there are none. Furthermore, the in-service training strategy suggested in Paragraph 9.7 should serve as a guideline in planning and designing in-service training courses.

(ix) The teacher-training models for the primary school (basic education) (Par. 9.4) and secondary school (secondary education phases of postbasic education) (Par. 9.5) should serve as guidelines for designing teacher-training programmes for gifted pupils.

(x) Training programmes for teachers of gifted pupils should be planned on a national and co-ordinated basis since, owing to the limited number of gifted pupils, training institutions cannot plan teacher training in isolation.

9.11 CONCLUDING REMARKS

The suggested teacher-training models make it possible for education departments and teacher-training institutions to design courses for the training of teachers of gifted pupils.

CHAPTER 10

EDUCATIONAL AND EDUCATION MANAGEMENT STRUCTURE FOR THE TEACHING OF GIFTED PUPILS

10.1 INTRODUCTION

There are arguments both for and against special education provision for gifted pupils. Those who are against special education for gifted pupils take the view that these pupils will always be gifted and that they will therefore satisfy their own educational needs. A further argument used by opponents of special education for gifted pupils is that if teachers are effective in doing their job of educating and teaching, gifted pupils will cope adequately without special educational programmes being provided for them in the education system.

The question to be answered as regards special education for gifted pupils is whether such education is in fact necessary. The answer to this question has been considered at length by researchers, educational experts and educational planners:

(i) Although gifted pupils can make satisfactory scholastic progress because they have the ability to master the subject matter, their potential is never developed to the full. Without subject matter that challenges them, the actualisation and realisation of their potential is inhibited. Therefore special education provision is essential if the ability of gifted pupils is to be developed.

(ii) Since human beings, and therefore also children, differ as regards the quality of their abilities, the education system should provide for the individual differences of pupils through differentiation and individualisation. Pupils will then receive an education that will develop their abilities to the maximum. If it is considered that special education provision is made for handicapped pupils to meet their special educational needs, then surely gifted pupils are also entitled to such special provision.

(iii) As gifted pupils have special abilities and specifically gifted pupils a specific ability that can be actualised through special educational programmes or facilities for the benefit of society (in its broadest sense), it is essential that special education provision be made for gifted pupils. Such provision should preferably be built into the educational and education management structure.

10.2 AN EDUCATIONAL AND EDUCATION MANAGEMENT STRUCTURE

10.2.1 Orientation

The expression *system for the provision of education* is used to designate organised formal education that is offered in an anticipated situation. One of the consequences of societies becoming industrialised is the development of forms of education that are both more complex and more differentiated in order to meet the demands of society and learners. The result is that different types of educational situations come about in order to meet specific educational needs (HSRC Education System Planning, 1981: 7-8). The variety of educational situations should be ordered in a structured way to ensure that education or instruction in a system of education provision is adequate and effective.

The Work Committee: Education System Planning distinguished the following structures that comprise a system of education provision:

(1) The educational structure, which means the composition of and the relationship between different kinds of education or learning situations.

(2) The educational control structure, which means the control and administration of the decision-making authority through which educational functions can be performed.

(3) The physical structure, which means the building complexes and related matters.

(4) The structure of supportive services, which comprises the following services: school guidance service, curriculum development service, remedial education service and health services.

(5) The financing structure, which means the funding of education (Work Committee: Education System Planning 1981: 9-10).

According to the report of the Main Committee of the HSRC Investigation into Education (1981: 95-96), the structures of a system of education provision should be fairly sophisticated in order to meet the demand for formal education. Whenever there are defects in the provision of education, the causes of those defects can be traced back to defects in the structures.

Since this chapter is concerned with an educational and an education management structure, only the functions of these two structures will be discussed.

The function of an educational structure is, on the one hand, to create and to organise differentiated educational opportunities so as to accommodate pupils in accordance with their educational needs and, on the other hand, to meet the differentiated educational needs - especially the manpower needs - of society. The effective functioning of the educational structure depends on an effective education management structure (administrative and control structure). Therefore the aim of education management (education management structure) is to achieve successful education within the educational structure.

The aims of education management, as set forth in the report of the Main Committee of the HSRC Investigation into Education: Provision of Education in the RSA (1981: 192-194), can be summarised as follows:

(i) To create, develop and maintain management structures that will enable education in South Africa to be relevant to the needs of the individual and of society, and that will be of a quality capable of serving those needs.

(ii) To create centralised decision-making structures and processes in order to develop and maintain participation, negotiation, co-ordination and control.

(iii) To develop and maintain decentralised decision making and participatory, co-ordinating control structures and processes.

(iv) To provide and maintain education that will meet the educational needs of pupils (learners) and society.

From its aims it is evident that education management has three levels. In its recommendations in this regard, the Main Committee of the HSRC Investigation into Education distinguishes a first (central) level of education management, a second or regional level of education management and a third (local) level (Report of the Main Committee 1981: 195-203).

Education management at the first or macrolevel is the responsibility of the central government, whereas education management at the second or mesolevel is the responsibility of the second-tier authorities and the third or microlevel of education management is the responsibility of the school.

On the basis of the foregoing it is recommended that a management structure for the education of gifted pupils be developed and maintained at the macrolevel, mesolevel and microlevel of education.

10.2.2 Microlevel management structure

In the first place accountable provision of education for gifted pupils calls for a centralised decision-making structure that can liaise with educational policy makers at the central level of government (first tier of government) as well as with education departments at the second or mesolevel of education management regarding the provision of education for gifted pupils. Liaison with the central government as the central level of education management is essential since the macropolicy for the provision of education is formulated at this level of education management with regard to the provision and financing of all aspects of education.

Liaison with the education departments as the second or mesolevel of education management is essential since it is at this level of management that the macropolicy for the provision of education is realised.

The recommendation of the Main Committee of the HSRC Investigation into Education (1981: 196-197) that a South African Council for Education (SACE) be statutorily established to give advice on macropolicy on education at the first or macrolevel of education management (central government as first tier of government), and the positive acceptance in the **White Paper on Education Provision in the Republic of South Africa** (1983: 7) of the SACE's function of giving advice on general educational matters, make it advisable for the provision of education for gifted pupils to be placed under the SACE. (The Project Committee: Framework for the Provision of Education for Gifted Pupils under the chairmanship of Dr J.S. Neethling also emphasises the necessity of the SACE's role in the provision of education for gifted pupils - pp. 44-45.)

It is recommended that a permanent national co-ordinating and advisory committee on education provision for gifted pupils be created as a permanent committee of the SACE to advise it on the provision of education for gifted pupils.

As regards the functions of such a committee, it is recommended that the committee should advise the SACE on the following matters (Project Committee: Framework for the Provision of Education for Gifted Pupils 1983: 44):

(i) Continuous planning to meet the educational needs of gifted pupils.

(ii) Programme development at the prebasic (preprimary), basic (primary) and secondary levels of education.

(iii) The financing of education for gifted pupils.

(iv) The planning and refinement of identification strategies.

(v) The training of teachers - full-time and in-service training.

(vi) The organisation of a national monitoring plan for the education of gifted pupils.

(vii) School guidance services for gifted pupils.

(viii) The maintenance of resource centres and a clearing-house for the education of gifted pupils.

(ix) The dissemination of information.

(x) The establishment of a national journal.

(xi) The arrangment of national conferences.

(xii) Research and the allocation of research in connection with, for example, educational planning for the identification, cost analysis and financing of teacher training for gifted pupils.

(xiii) National educational policy for the provision of education for gifted pupils on the basis of research results.

(xiv) Specific functions that may be assigned to the committee, for example, liaison with the educational authorities in connection with education for gifted pupils.

The proposal contained in the working paper of the Project Committee: Framework for the Provision of Education for Gifted Pupils regarding the constitution of a national co-ordinating and advisory committee on the provision of education for gifted pupils was accepted by the work committee.

It is recommended that a national co-ordinating and advisory committee on the provision of education for gifted pupils be constituted as follows:

(i) A secretariat consisting of professional and administrative staff to assist the committee in the performance of its functions as well as to liaise with education departments.

(ii) Experts in the field of education for gifted pupils from the following:

- All the education departments;
- universities and colleges of education;
- the Human Sciences Research Council;
- other institutions of tertiary education;
- the federated teachers' associations;
- the private sector.

With a national co-ordinating and advisory committee constituted in this way, all the bodies and authorities having an interest in the education of gifted pupils will be included. The involvement of education departments has a bearing on the provision of formal education and the training of teachers. Universities have an interest in teacher training, research and the possibility of advanced placement of gifted pupils. Other tertiary education institutions also have an interest in the advanced placement of gifted pupils.

The HSRC's interest is in research, and the private sector can make a contribution as regards mentors and the provision of facilities.

10.2.3 Mesolevel management structure

As the educational authorities are responsible for the provision of formal education, they also provide the education management set-up to ensure the smooth running of education. According to the working paper of the Project Committee: Framework for the Provision of Education for Gifted Pupils (1983), education for gifted pupils in the USA is controlled through departmental management structures.

An education management mesostructure (second-level education management structure), in other words an education management structure for the education of gifted pupils at education department level, is necessary to interpret national educational policy regarding education provision for gifted pupils with a view to the implementation of this policy.

According to the Project Committee: Framework for the Provision of Education for Gifted Pupils (1983), a departmental education management structure for gifted pupils is essential, particularly if the following are taken into account with regard to modes of provision of education:

(i) Availability of teachers for the education of gifted pupils.
(ii) The geographical distribution of schools.
(iii) The distribution of gifted pupils in schools and areas.

Various modes of education provision for gifted pupils can be provided in the schools of an education department. Therefore control and monitoring are necessary to ensure that the education provided for these pupils is effective.

It is recommended that a departmental co-ordinating and advisory committee on the provision of education for gifted pupils should be created and that this committee should be directly accountable to the head of the education department for its activities.

It is recommended that the functions of this departmental co-ordinating and advisory committee should be as follows:

. To interpret macropolicy on education regarding education provision for gifted pupils and to advise the head of the education department on the implementation of this policy.

. To advise the head of the education department on the planning of education for gifted pupils.

. To co-ordinate all departmental activities pertaining to education for gifted pupils so as to avoid overlapping and duplication of education provision for such pupils.

. To liaise with co-operative educational services with a view to ensuring that such services will be provided for gifted pupils, and to advise the head of the education department in this connection.

With regard to the composition of the departmental co-ordinating and advisory committee on education provision for gifted pupils, it is recommended that

- the head of the education department should appoint the chairman of the committee,

- education planners, inspectors, subject advisors and the head of the psychological services should serve on the committee,

- the head of the education department should appoint a senior professional officer to convey the decisions of the committee to education management at the microlevel.

The implementation of departmental policy regarding education provision as based on the departmental committee's advice to the head of the education department, calls for staff who will ensure that this policy is carried out at the micro-level of education.

It is recommended that a co-ordinating planner be appointed for education provision for gifted pupils to take charge of the activities of the departmental co-ordinating and advisory committee and, through regional co-ordinators, to disseminate information among the schools on the implementation of education for gifted pupils.

It is further recommended that regional co-ordinators be appointed with the following duties:

(i) To liaise with schools with a view to explaining the education department's policy on education for gifted pupils.

(ii) To give schools guidance on the implementation of education for gifted pupils.

(iii) To arrange regional in-service training programmes for teachers of gifted pupils.

(iv) To arrange for liaison between schools and tertiary education institutions.

(v) To give the educational planners (co-ordinators) feedback on the implementation of and the position with regard to education for gifted pupils.

(vi) To identify gifted pupils' educational needs and to report these needs to the co-ordinating planner for submission to the departmental co-ordinating and advisory committee.

10.2.4 Microlevel management structure

Education for gifted pupils is provided in the school. Therefore a management structure is needed for the effective planning and management of education for gifted pupils at school level. In Chapter 3 of this report it is recommended that a school co-ordinating committee for gifted learners be created at schools to ensure effective education for gifted pupils.

According to the Project Committee: Framework for the Provision of Education for Gifted Pupils (1983: 44), it is essential that a school co-ordinating committee be established at schools since the special nature of each school requires that education provision for gifted pupils be effectively planned, co-ordinated and implemented, taking into consideration the circumstances at the school. According to the literature referred to by the project committee and the experience of the Cape Education Department (which offers education for gifted pupils at schools), a school co-ordinator and therefore also a school co-ordinating committee are required if effective education is to be ensured for gifted pupils.

It is recommended that a school co-ordinating committee for gifted pupils be created at school and that such a committee should have the following functions:

(i) Overall planning of education for gifted pupils.

(ii) The appointment of a panel on a planning committee to investigate identification strategies, school guidance and teaching strategies.

(iii) The appointment of a panel of assessors for the identification of gifted pupils for placement in educational programmes.

(iv) The orientation of all interested parties regarding education for gifted pupils.

(v) The co-opting of experts (knowledge and experience) to serve on the planning committee for education strategies and the panel of assessors.

As regards the composition of a school co-ordinating committee, it is recommended that the following persons should be members of the committee:

- Principal and deputy principal of school
- Subject inspectors/subject advisors
- Experienced subject teachers
- Teachers of gifted pupils
- Representative of the psychological services
- Circuit inspector
- Head of department: Educational guidance
- School guidance officer/school psychologist/guidance teacher at the school
- Class teacher/tutor
- School co-ordinator for gifted pupils

As the decisions of the school co-ordinating committee have to be translated into practice, it will be necessary to designate a responsible person to carry out the decisions of the school co-ordinating committee (at the school).

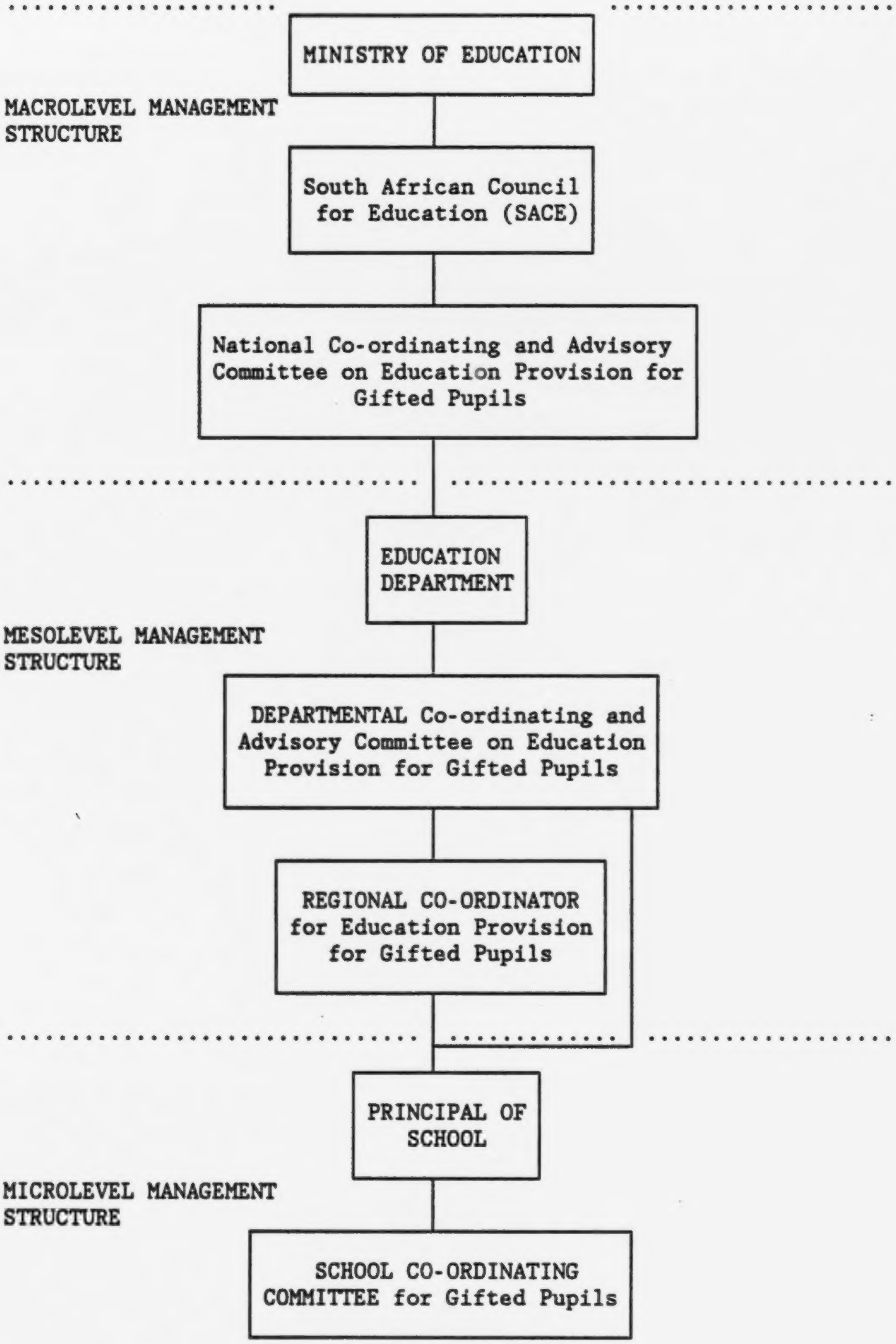
It is recommended that a school co-ordinator be designated to organise education for gifted pupils in the school in conjunction with the school co-ordinating committee and to liaise with the regional co-ordinator for gifted pupils in connection with education for gifted pupils.

10.3 EDUCATIONAL STRUCTURE FOR GIFTED PUPILS

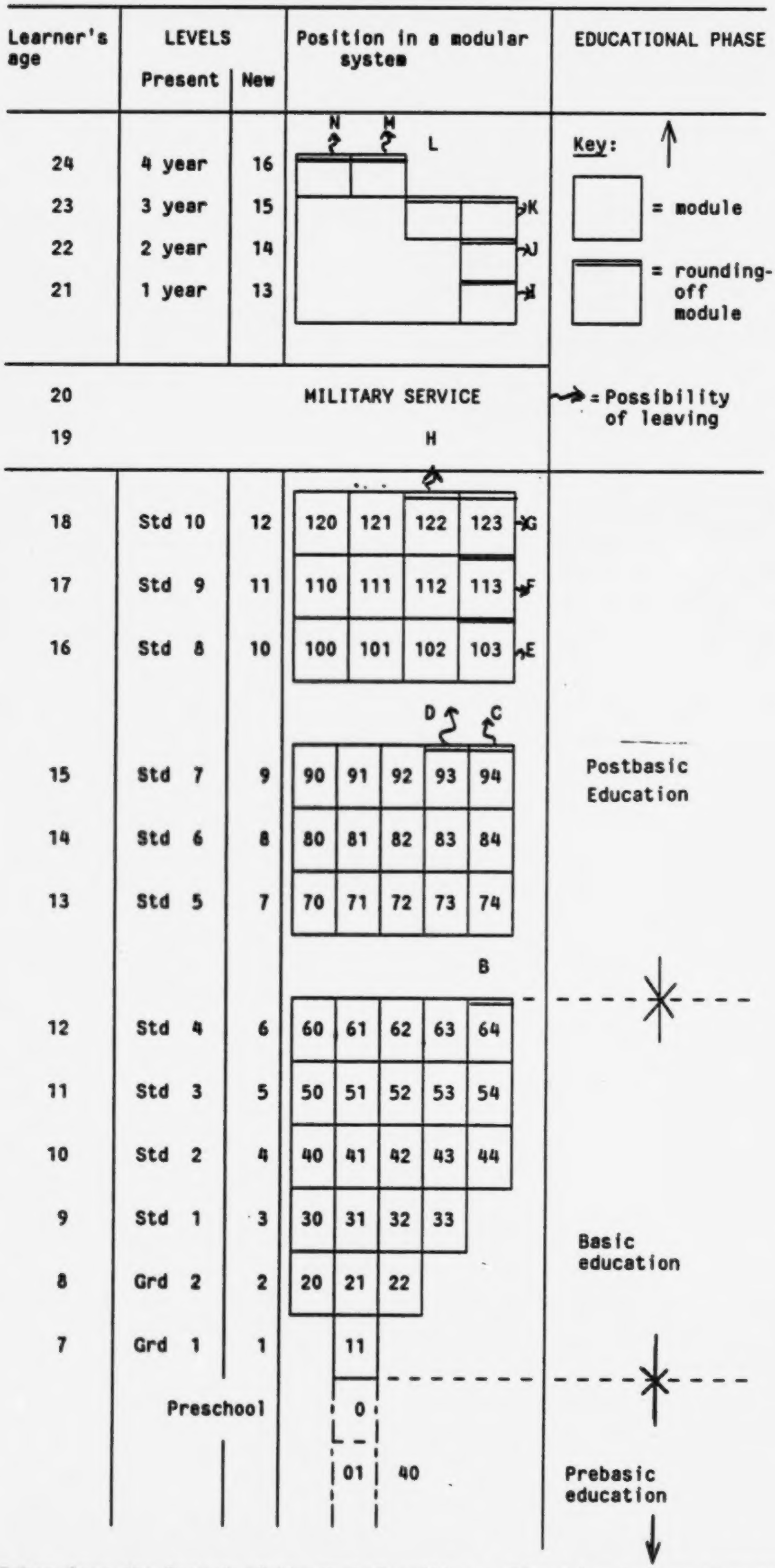
As regards the educational structure for gifted pupils, the Report of the Main Committee of the HSRC Investigation into Education (1981: 95) is endorsed. It is, moreover, apparent that the educational structure is a configuration of different educational situations creating different educational possibilities and different possibilities with regard to vertical and horizontal flow.

This modular formal educational structure is aimed at maximum flow (see scheme) in both the basic education phase and the junior and secondary postbasic education phase. A further extremely important aim that is evident from the Report of the Work Committee: Education System Planning (1981: 87) is " ... to offer the highly gifted child from the start the opportunity to master the basics sooner and to offer the less gifted child after Level 1 the advantage of additional support". It also appears that the subject matter of Grade 0 in the formal modular educational structure will, except for the first level (present Grade 1/Substanderd A), be enriched to the

SCHEME: EDUCATION MANAGEMENT STRUCTURE FOR EDUCATION PROVISION FOR GIFTED PUPILS IN THE RSA


MINISTRY OF EDUCATION
MACROLEVEL MANAGEMENT STRUCTURE
South African Council for Education (SACE)
National Co-ordinating and Advisory Committee on Education Provision for Gifted Pupils
EDUCATION DEPARTMENT
MESOLEVEL MANAGEMENT STRUCTURE
DEPARTMENTAL Co-ordinating and Advisory Committee on Education Provision for Gifted Pupils
REGIONAL CO-ORDINATOR for Education Provision for Gifted Pupils
PRINCIPAL OF SCHOOL
MICROLEVEL MANAGEMENT STRUCTURE
SCHOOL CO-ORDINATING COMMITTEE for Gifted Pupils

SCHEME: SUMMARY: A MODULAR EDUCATIONAL STRUCTURE FOR INTERCHANGEABILITY WITHIN FORMAL EDUCATION



Learner's age	LEVELS Present	New	Position in a modular system	EDUCATIONAL PHASE
24	4 year	16		
23	3 year	15		
22	2 year	14		
21	1 year	13		
20	MILITARY SERVICE			
19				
18	Std 10	12	120 121 122 123	
17	Std 9	11	110 111 112 113	
16	Std 8	10	100 101 102 103	
15	Std 7	9	90 91 92 93 94	Postbasic Education
14	Std 6	8	80 81 82 83 84	
13	Std 5	7	70 71 72 73 74	
12	Std 4	6	60 61 62 63 64	
11	Std 3	5	50 51 52 53 54	
10	Std 2	4	40 41 42 43 44	
9	Std 1	3	30 31 32 33	Basic education
8	Grd 2	2	20 21 22	
7	Grd 1	1	11	
	Preschool		0	
			01 40	Prebasic education

Taken from the Report of the Work Committee: Education System Planning, p. 96 (Report 5, 1981).

extent that the degree of difficulty of the subject matter will be higher than that of the subject matter in Grade 1 (horizontal Grade 1) (Report of the Main Committee of the HSRC Investigation into Education, 1981: 111). In this way gifted pupils will be confronted with subject matter within the educational structure that will decidedly challenge their abilities and should enable them to develop their potential to the maximum.

The recommendation of the Main Committee of the HSRC Investigation into Education that there should be a special vertical interchangeability level for gifted pupils in the educational structure recognises the fact that special education provision for gifted pupils should be made official. It should be pointed out at this stage, however, that the number of gifted pupils at some schools will be too low for a special educational level to be maintained. It should also be borne in mind that the non-availability of teachers may make it impossible to maintain such an educational level for gifted pupils in smaller schools. Therefore forms of education provision will have to be included so as to offer gifted pupils education within the mainstream of education, in accordance with circumstances which are peculiar to the respective educational authorities.

A further recommendation of the Main Committee of the HSRC Investigation into Education, namely that special enriched subject matter for gifted pupils should be the obvious way of providing education for such pupils within and supplementarily to the mainstream of education, is accepted. This principle also makes it possible to include different modes of education provision at schools for the benefit of gifted pupils, depending on the number of these pupils and the availability of teachers.

10.4 STRATEGIES FOR THE PROVISION OF EDUCATION

10.4.1 Provision of gifted child education within and as a supplement to mainstream education

The recommendation that formal education for gifted pupils should be offered within the education dispensation requires that a curriculum be designed for all subjects within the special vertical education flow level, the subject matter of which will be at a degree of difficulty where it will meet the educational needs of gifted pupils. Gifted pupils will therefore be placed in a special educational stream within mainstream education. This will be possible only if there are enough pupils to maintain the vertical educational flow level.

Supplementary to the special educational stream within the mainstream of education, education can be offered in various ways in order to meet the special educational needs of the gifted pupils.

Formal provision of education for gifted pupils is possible only if overall plans of action are based on principles of differentiation (differentiation strategies) and if organisational structures or practice designs (forms of education) are implemented to operationalise the differentiation strategies in the teaching situation.

10.4.2 Differentiation strategies aimed at ensuring education provision for gifted pupils*

Differentiation can be defined as education measures aimed at offering individual pupils the opportunity of realising their abilities to the maximum. Differentiation strategies that have been distinguished as overall plans of action to ensure that education for gifted pupils will be effective in particular educational situations are acceleration, enrichment, individualisation and grouping.

(1) Enrichment: By enrichment is meant the augmentation of the curriculum by means of programmes that will deepen and broaden gifted pupils' understanding. Enrichment programmes will be aimed specifically at the pupils' particular, individual educational needs.

(2) Acceleration: This means the creation of opportunities to enable gifted pupils to acquire basic knowledge quickly so that they can complete the school programme earlier and reach the higher levels of abstraction and problem solving sooner.

(3) Grouping: This means bringing pupils together in teaching situations in accordance with specific criteria. Gifted pupils can be grouped, on the basis of exceptional performance in all their subjects, in separate homogeneous classes within a special grade of education so as to form a vertical educational stream for the gifted. Specifically gifted pupils can also be grouped homogeneously in one or a number of subjects according to performance and abilities (aptitude, interest) in order to meet the individual educational needs of such pupils.

(4) Individualisation: Since pupils (and indeed all human beings) differ in their abilities (intellect, aptitude, interest, emotions), the education system should provide for these differences. Gifted pupils with, for example, high intellectual capacity, exceptional mathematical, mechanical linguistic, artistic, musical, oratorical and leadership qualities and abilities cannot come into their own in mainstream education.

Individualisation in education for gifted pupils should be directed towards education provision that enables the pupils to participate independently in the educational process. In this way it will be possible to meet the unique educational needs of gifted pupils.

According to the Project Committee: Framework for the Provision of Education for Gifted Pupils, these four differentiation strategies in particular are employed overseas in the planning of education for gifted pupils. In the RSA, the Cape, Natal and Transvaal Education Departments and the Department of Education and Culture of the Administration of the House of Delegates have also successfully applied these strategies in providing education for gifted pupils.

---

* cf. C.A. Taylor and C.P. van der Westhuizen, Die onderrig van die begaafde kind, pp. 67-79.

These differentiation strategies will therefore also have to be taken into account in the future provision of education for gifted pupils in the RSA.

10.4.3 Forms of education for gifted pupils in the school*

Different forms of education by means of which the education of gifted pupils can be organised in the school situation (microlevel of education) were considered by the Work Committee: Education for Highly Gifted Pupils. The forms selected were chosen on the basis of availability of staff, economic considerations, geographical distribution of schools and density of school population. The following forms of education were identified:

(1) Special schools: Special schools provide education for gifted pupils whose performance in all their subjects is exceptional.

(2) Magnet schools: Magnet schools cater especially for the gifted pupils of a particular area or city, offering them instruction in one or two areas of the curriculum, for example languages and science. Magnet schools are geared for specific giftedness.

(3) Magnet classes: Magnet classes are made up of specifically gifted pupils grouped together on a part-time basis for instruction in specific subjects or groups of subjects.

(4) Extracurricular centres: Extracurricular centres offer gifted pupils continuous enriched after-school educational programmes. In this way the pupils are given enriched learning experiences in a variety of subject areas to augment what they have been taught at school.

(5) Advanced placement: Advanced placement means that, while still at school, gifted pupils can take courses, sit examinations and obtain credits in university courses that will enable them to continue their studies in advanced courses leading to degrees when they leave school.

(6) Summer/Winter/Vacation schools at institutions of tertiary education: During school vacations special educational programmes for gifted pupils are offered at tertiary education institutions by these institutions in association with education departments.

(7) Summer/Winter/Vacation schools at school: Schools with boarding or accommodation facilities can offer vacation schools or weekend programmes with an enrichment bias (extension programmes) involving gifted pupils from a number of schools in studies in a particular field. During such programmes staff from tertiary institutions as well as teachers act as mentors.

(8) Pull-out systems: Gifted pupils who have mastered the content of a

---

* cf. C.A. Taylor nd C.P. van der Westhuizen, Die onderrig van die begaafde kind, pp. 99-111.

subject are pulled out of their classes and, either individually or as a group, given special instruction that is accelerative or enriching.

(9) Enrichment education in the ordinary class: Enriched education for gifted pupils in the ordinary class means that individual pupils or a group of pupils in the class are given more advanced work to enable them to explore problem-solving strategies through learning experiences and to deepen their understanding and broaden their knowledge.

(10) Mentor: A mentor is a person in the school or from the community who has been selected on the basis of his knowledge to instruct a pupil or a group of pupils in a specific subject or topic.

(11) Itinerant teachers: Where the number of gifted pupils and the geographical circumstances do not warrant the presence of specialist teachers for such pupils at a particular school, gifted pupils from a group of schools are catered for by an itinerant teacher. The itinerant teacher arranges workshops for teachers and plans programmes for the gifted pupils.

(12) Specialist teachers: At schools where the numbers of gifted pupils warrant additional posts, specialist teachers (selected and trained for the education of gifted pupils) are appointed to teach these pupils.

(13) Centre for accelerated education: Such a centre is a school where accelerated education is offered. The rationale for acceleration is that the pupils can complete the secondary school curriculum more quickly. Having completed the school curriculum up to Standard 10 level one or two years sooner, gifted pupils take university courses for the remaining period of the senicr intermediate educational phase (senior secondary school phase) and can obtain credits in these courses, enabling them to complete a Bachelor's degree in less than the prescribed period.

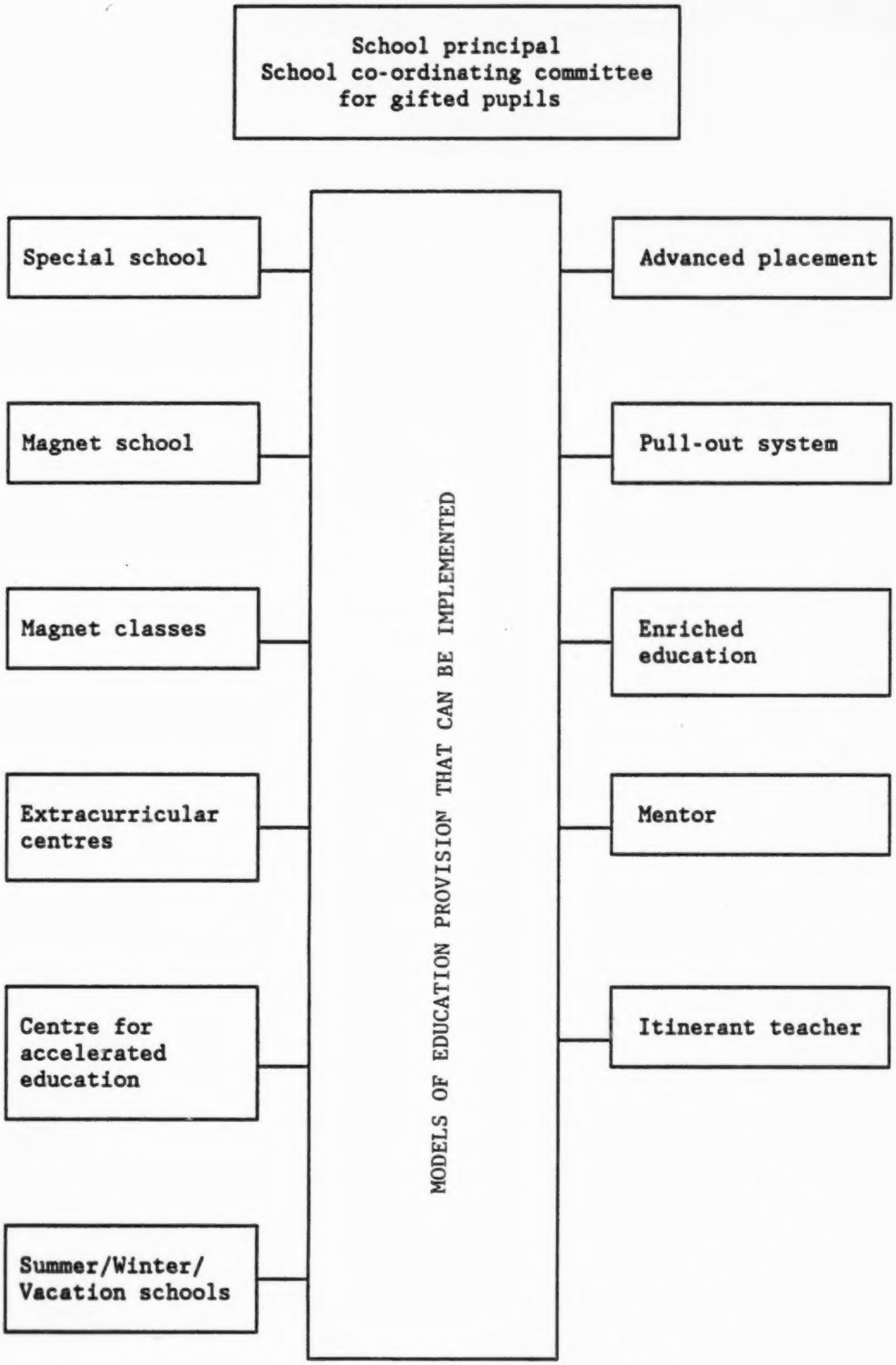
10.5 RECOMMENDATIONS CONCERNING FORMS OF EDUCATION FOR GIFTED PUPILS

When relating forms of education to the differentiation strategies, it is necessary to point out that with proper planning, various forms can realise the same differentiation strategies, or even all four of the differentiation strategies referred to, in educational situations.

In its report the Main Committee of the HSRC Investigation into Education (1981: 112) recommends that a special vertical educational flow level be established in the education system for gifted pupils and that enriched subject matter be provided for all the subjects so that gifted pupils will be able to realise their potential to the full in this educational stream.

It is recommended here that there should be such a special stream of education at all schools to meet the educational needs of gifted pupils, but that where, owing to the small number of gifted pupils and/or the non-availability of teachers, it would not be possible to

SCHEME: MODES FOR EDUCATION PROVISION FOR GIFTED PUPILS AT SCHOOLS


School principal
School co-ordinating committee
for gifted pupils
MODELS OF EDUCATION PROVISION THAT CAN BE IMPLEMENTED
Special school
Magnet school
Magnet classes
Extracurricular centres
Centre for accelerated education
Summer/Winter/ Vacation schools
Advanced placement
Pull-out system
Enriched education
Mentor
Itinerant teacher

maintain such an arrangement, other forms of education provision should be used to make education for gifted pupils possible.

Although gifted pupils in this special stream will be able to come into their own, there will be other gifted pupils who have particular education needs that still have to be met. By making use of special forms of education within and as a supplement to the special stream, these other pupils can be afforded the opportunity of developing their specific giftedness.

As regards the forms of education that can be used to offer gifted pupils an education that will, within and as a supplement to the education system, be able to meet their special educational needs in a special stream of education, or if, owing to insufficient numbers, it is not possible to maintain a special stream of education, the recommendations are as follows:

(1) Extracurricular centres

As extracurricular centres in densely populated areas are an effective means of providing education (because in such areas existing educational facilities can be used and staff from tertiary education institutions are available to give lectures), it is recommended that

. education departments that have already established extracurricular centres should go ahead with these centres and expand them,

. extracurricular centres should be considered by other departments in densely populated areas,

. the practical training of teachers for gifted pupils should be offered at extracurricular centres.

(2) Pull-out system

As pull-out systems afford gifted pupils the opportunity of receiving special individual or group instruction in one subject or a number of subjects, and as these systems can be maintained with the available facilities and teachers, the following are recommended for consideration:

(a) Pull-out from the ordinary classroom situation: If a gifted pupil (or gifted pupils) has mastered the content of a subject, consideration should be given to his/her being pulled out of the class and included in special educational programmes of an enriching or accelerative nature.

(b) Magnet classes: If a group of gifted pupils needing special educational programmes in specific subjects or groups of subjects justifies a separate class, it is recommended that

. the creation of a magnet class or classes be considered with a view to offering gifted pupils special enriching instruction in specific subjects or groups of subjects,

. existing educational facilities at the school be used for magnet class activities and that teachers at the school give the necessary instruction.

(c) Magnet schools. If there are gifted pupils in a particular region, city or town who should be receiving special instruction in one or two areas of the curriculum, the existing educational facilities of a school and the teachers at the schools in the area can be used for the presentation of special instructional programmes. Such an arrangement would mean that gifted pupils from schools in the surrounding area would have to travel to the school concerned.

Since it is essential to create educational opportunities for gifted pupils, it is recommended that magnet schools be established to offer special programmes in areas of the curriculum to meet the specific educational needs of these pupils.

(3) Special schools and centres for accelerated education for gifted pupils

Special schools and centres for accelerated education are institutions which, as full-scale schools, offer education exclusively for gifted pupils. Because of the large areas involved, as well as the small numbers of gifted pupils and staffing problems at schools, it may be necessary to consider the creation of special schools or centres for accelerated education. In densely populated areas/cities where there is a shortage of highly specialised teachers who can help establishing such centres, it may be necessary to consolidate educational facilities and staff in order to provide special education for gifted pupils.

It is recommended that, depending on particular circumstances, the educational authorities should consider the establishment of special schools or centres for accelerated education for gifted pupils.

(4) Enriched education in the ordinary classroom situation

If gifted pupils have mastered the content of subjects and have outstripped other pupils in this regard, they can be given special assignments that will enrich the subject syllabi. These assignments should be aimed at deepening their knowledge of certain subjects (subject-integrated education).

It is recommended that the educational authorities consider enriched education that can be integrated with a subject or subjects with a view to meeting educational needs of gifted pupils.

(5) Itinerant teachers

It is recommended that if, owing to pupil numbers and geographical considerations, a specialist teacher for gifted pupils is not warranted at a certain school, an itinerant teacher responsible for the education of gifted pupils at a number of schools be appointed to supervise the education of these pupils.

(6) Mentors

It is recommended that experts be identified in the community to give individual gifted pupils or groups of gifted pupils guidance on projects during or after school.

(7) Advanced placement

Accelerated education can be offered in the special educational stream for gifted pupils, as in the educational structure envisaged in the Report of the Main Committee of the HSRC Investigation into Education. Accelerated education can also be provided by means of a centre for accelerated education, special schools, class or subject acceleration, magnet classes and magnet schools. Through acceleration, gifted pupils can complete the whole curriculum of the senior secondary intermediate educational phase one or two years earlier. Gifted pupils can also complete the curriculum for certain subjects one or two years sooner. For the rest of the time they can take university courses or courses offered by other tertiary education institutions.

Advanced placement is interrelated with accelerated education and means that, while still at school, gifted pupils can have access to university instruction. Access to university subjects should be meaningful to these pupils and motivate them to study the subjects further. Motivation is possible if the pupils receive recognition for the university subjects they pass, so that they are not required to repeat the subjects later at university. In this way gifted pupils can also complete their graduate studies more quickly.

It is recommended that

- heads of education and university principals consider granting gifted pupils recognition for degree purposes, for university subjects they pass during their school career;
- heads of education and university principals lay down guidelines regarding the manner in which gifted pupils can link up with university courses;
- heads of education and heads of other tertiary education institutions consider admission requirements with a view to recognising for further study purposes the courses of these institutions which gifted pupils successfully complete during their school career;
- heads of education and heads of other tertiary education institutions lay down guidelines regarding the manner in which gifted pupils can link up with courses offered by these institutions.

(8) Planning as regards linking up the various forms of education for the education of gifted pupils

It appears that the differentiation forms, namely enrichment, individualisation, acceleration and grouping, are realised separately or in combination through the various forms of education. It

343

also appears that one form of education can be linked to another (for example in magnet schools it is also possible to accomplish advanced placement as well as enriched education). Therefore thorough planning is needed as regards the way in which forms of education can be implemented in schools.

It is recommended that the education management structure for education for gifted pupils should give attention to the planning of forms of education before education for gifted pupils is instituted at schools.

10.6 PROVISION OF EDUCATION FOR GIFTED HANDICAPPED PUPILS

10.6.1 Note

Education for the nine statutorily defined categories of handicapped pupils is offered outside the mainstream of education. A number of findings regarding the provision of education for gifted handicapped pupils and recommendations that ought to be considered are given below.

10.6.2 Identification of gifted handicapped pupils

There are handicapped pupils who are gifted. In the literature on the subject there are many references to great achievers in the past, such as Einstein, who were handicapped. Some authorities believe that the percentage of gifted persons among the handicapped may be the same as for the population as a whole (3 to 5 %) (Maker 1977: 4; Whitmore 1981: 107). It is considered to be in the interest of these pupils and the country in general that they be identified and helped to develop to their full potential.

The use of intelligence and other tests that have been standardised for non-handicapped children are often not a suitable method of determining aptitude in the handicapped. In the case of the handicapped one should look for potential rather than demonstrated ability as revealed by IQ tests (Maker 1977: 25-30). The following are examples of ways in which pupils' potentialities (giftedness) can be identified:

(i) The use of a checklist, like that compiled by Torrance, of characteristics that can be used for identification purposes (Maker 1977: 25-30);

(ii) the use of biographical data forms in which information from various sources (reports and questionnaires) can be collected and collated;

(iii) the comparison of one handicapped person with other members of his own subgroup (for example, a blind person with other blind persons);

(iv) the identification of characteristics that enable the handicapped person to compensate effectively for his handicap. In the prediction of giftedness in the blind, a factor such as auditive memory should, for example, weigh more heavily than

344

other factors, while in the case of other handicaps, other qualities may have to weigh more heavily.

10.6.3 Educational programmes for gifted handicapped pupils

Because of the relatively low frequency of gifted handicapped pupils and the considerable individual differences between handicapped persons, programme development in their case calls for an individual approach. The following principles for the design of educational programmes that may be relevant for most gifted handicapped pupils have been identified:

(i) The development of a realistic self-concept is of primary importance and should be given a great deal of attention.

(ii) A sound balance in emphasis between strong and weak points should be maintained in the programme. Each form of giftedness discovered should be purposefully stimulated and developed, and the pupils should constantly be faced with intellectual challenges.

(iii) Affective development should be an important element of the programme.

10.6.4 Recommendations regarding the identification of gifted handicapped pupils

As regards the identification of gifted handicapped pupils it is recommended

(i) that earlier and more accurate identification of handicaps be given attention;

(ii) that care be taken that the identification of a handicap does not result in attention being focused exclusively on overcoming problems that result from the handicap, with an accompanying narrowing of the educational programme;

(iii) that particular care be taken to ensure that a handicapped pupil is not allowed to continue as an underachiever in an ordinary class because his achievements in relation to the rest of the group in the class indicate satisfactory progress (especially in schools where facilities to ensure full realisation cannot be provided);

(iv) that in schools for special education (as well as in the case of Category A and B specifically learning disabled pupils in ordinary schools) more purposeful and systematic efforts be made to identify giftedness in pupils;

(v) that in efforts to identify gifted handicapped pupils the focus should not be so much on demonstrated achievements (as in the case of IQ tests) but rather on potentialities, as suggested by Maker;

(vi) that in the course of time, with a view to the identification of potential aptitude, attention be given to the compilation of checklists (like that of Torrance) and biographical data forms that can be used for identification purposes;

(vii) that in the search for gifted pupils among the handicapped, wider use be made of the methods of comparison with other members of the pupil's own handicapped subgroup and that tests standardised for non-handicapped persons be used to a lesser extent;

(viii) that, in respect of the various handicaps, research be encouraged in order to identify those characteristics which will enable such persons to compensate effectively for their specific handicaps and which should therefore carry more weight in the identification assessment.

10.6.5 Recommendations concerning the planning of educational programmes

It is recommended that programme planning for gifted handicapped pupils

- be done on an individual basis;
- be done on a multidisciplinary basis;
- include the necessary supportive services;
- give particular and constant attention to the development of a realistic self-concept;
- include affective development as a specific component of the programme.

10.6.6 Recommendations concerning school guidance

As regards school guidance it is recommended that

(i) individual guidance, which should include the earliest possible occupational choice, be given the highest priority from the outset;

(ii) opportunities for contact with non-handicapped persons in relevant areas should not be neglected in seeking to promote attitude formation.

10.6.7 Recommendations regarding an educational and education management structure

It is recommended that the educational and education management structure that has been suggested for education provision for gifted pupils within the mainstream of education should as far as possible be applied also to education provision for gifted handicapped pupils.

10.7 CONCLUDING REMARKS

As regards the provision of education for gifted pupils, the Work

Committee: Education for Highly Gifted Pupils sought to lay down guidelines for identification procedures, education for underachievers, school guidance, curriculum development, teacher training and an educational and education management structure.

If the educational authorities take note of these guidelines in the planning of education for gifted pupils, these pupils should come into their own in the education system.

ADDENDUM A

INFORMATION SHEET 1: INFORMATION SHEET FOR PARENTS CONCERNING INTELLECTUALLY GIFTED PUPILS

DEFINITION

By intellectually gifted pupils is meant pupils whose performance is consistently exceptionally high in all or most school subjects. Individual pupils will, however, not display all the following characteristics by which intellectually gifted pupils can be identified.

THE CHARACTERISTICS OF THE INTELLECTUALLY GIFTED PUPIL

- The intellectually gifted pupil obtains exceptionally high marks in all (or almost all) his school subjects.
- He displays excellent concentration, he learns with ease and he has excellent retention.
- He has the ability to complete tasks and is thus persevering.
- He is very observant and hears and sees things that may escape others' notice.
- He is characterised by his fluency of language, his extensive vocabulary, his understanding of the meanings of words and his correct use of words.
- He has a strong desire for perfection and becomes impatient if work is not done to perfection.
- When performing a task, he takes unusual and unfamiliar short cuts.
- The intellectually gifted pupil is interested in a great variety of matters, has several hobbies and has extensive knowledge of a wide range of subjects.
- He has a very enquiring mind and asks unusual and sensible questions.
- He shows intense interest in the detail and complexity of things as well as in possible implications and consequences.
- He reads about a wide variety of subjects and makes frequent and effective use of the resource centre.
- The intellectually gifted pupil displays an exceptional capacity for identifying problems and has the ability to come up with a variety of ideas for experimenting and solving problems.

* He is able to approach problems from a variety of angles and to suggest and apply alternative ideas for their solution.

* He is able to define a problem, to formulate hypotheses, to test ideas and to draw valid conclusions.

* The intellectually gifted pupil has excellent judgement, the ability to reason logically about situations, to apply knowledge and ideas, to see connections and to arrive at conclusions.

* He displays independence of thought by applying his own ideas and methods in situations and does not accept authoritarian pronouncements as being necessarily correct.

* He is more inclined to abstract thought and has the ability to proceed from the particular to the general.

* His thinking is characterised by the originality of his ideas.

* He has vision regarding the future, as well as the ability to learn from experience and benefit by it.

* He is less inclined to take things for granted, usually wanting to get to the heart of a matter and adopting an analytical approach to complex material.

* He is usually aware of the cause-effect relation between matters and displays insight in this regard.

* He is often sceptical, critical and evaluative, is quick to notice inconsistencies and equally quick to spot similarities, differences and defects.

* He sometimes tends to daydream if the subject matter is not interesting enough.

* He can execute tasks and assignments with the minimum of supervision and assistance from adults and can apply research methods in carrying out various tasks independently of others.

* He has an exceptional ability to express himself in art, music, drama, creative writing, model building, etc.

* The intellectually gifted pupil is sometimes sensitive to others' criticism and demands.

* He displays a sense of humour that may betoken hostility or friendliness.

* He has a zest for life and is game for almost anything, so much so that he is sometimes described as hyperactive.

* His behaviour is often well organised and purposeful as regards carrying out assignments and solving problems.

- He has a highly developed sense of moral and ethical responsibility and is upset by unfairness and injustice.

- He is able to integrate conflicting impulses such as constructive and destructive behaviour.

- He has a realistic, positive self-image, enough self-confidence and a large measure of affective (emotional) stability.

- He reacts positively to new, strange and incongruous or mysterious elements in his environment by investigating and manipulating them.

- He likes structure, order and consistency.

- The intellectually gifted pupil displays a high degree of idealism and makes high demands on himself.

- He is intensely interested in the welfare of society and has the ability to understand, reason about and offer solutions to social problems, in addition to which he wants to be of service.

- He gets on well with adults and may prefer the company of older pupils and adults to that of his peer group.

- He organises and takes the lead in group activities, often completely taking charge of things.

- At times he tends to criticise fellow pupils for their unrealistic ideas and thoughtlessness.

- He sometimes tends to be a loner, withdrawing himself from the group.

- Sometimes he does not show much interest in extramural activities.

- At times he may be somewhat aloof towards others.

THE CHARACTERISTICS OF THE GIFTED PUPIL WHO DISPLAYS EXCEPTIONAL CREATIVE ABILITY

- This pupil has the ability to come up with a variety of original and qualitatively excellent ideas about a particular matter.

- He has the ability to elaborate ideas and to integrate the main idea and subsidiary ideas into a whole.

- He displays flexibility of thought which makes adjustment to new ideas and circumstances possible and enables him to perceive a variety of solutions to the same problem.

- The gifted pupil with exceptional creative ability shows a particular sensitivity to the world around him. The reality of life interests him, and experiences prompt him to enquire about the world around him.

* He displays special sensitivity to problems and is able to define and formulate them and suggest solutions.

* He is able to solve problems down to the smallest detail: he therefore achieves a more accurate and profound perspective than others.

* This pupil usually has a high intellectual capacity.

* He has the ability to perceive, understand, interpret and explain the interaction and relationships between the whole and the parts of what he observes in his world.

* He has the ability to analyse, organise and synthesise data or observed information in order to form a total picture.

* His approach to familiar objects and situations is unusual and he is able to view matters from a variety of perspectives.

* He displays a willingness to become involved in the complex and the unconventional.

* He often displays intellectual playfulness and is inclined to fantasise.

* He learns sooner through experimenting and through manipulating objects than through authoritarian methods of teaching; he seeks answers to questions in his own characteristic way.

* He is able to keep himself occupied without being stimulated, shows a great deal of untiring industry, is dedicated and can lose himself in his work for long periods without showing signs of fatigue. He often goes beyond the confines of an assignment.

* This pupil displays a sensitivity to beauty and responds emotionally to the aesthetic.

* He displays affective (emotional) sensitivity and is aware of his own impulses and irrationality.

* He displays a high degree of inquisitiveness in investigating or examining objects, ideas, situations and events.

* Depending on the situation, he is capable of conformity or nonconformity.

* He is not overly dependent on his parents, and the parent-child relationship is healthy.

* He displays independence of thought and behaviour, is indivi-

dualistic and prefers to work on his own.

- At times he may seem to be daydreaming, whereas in fact he is immersed in creative thought.
- He displays flexibility and adaptability of thought, which makes it easy for him to depart from the beaten track and he does not fear the consequences of doing so.
- He has a positive, realistic self-image and has the self-confidence to question the commonplace and the generally accepted.
- He has the courage to be receptive to outward and inward experiences, to try to attain the apparently impossible and to run great risks.
- He believes in himself and rejects outside criticism if he considers it to be unjustified.
- He sometimes tends to be an introvert.
- He has unconventional occupational aspirations.

SOURCES

Cutts and Moseley (1958: 18-26), Smaltz and Mathisen (Crow and Crow 1963: 37-38), Gold (1965: 80), Hildreth (1966: 166-168), Gallagher (1975: 34), Michael (Stanley, George and Solano 1977: 146-147), Martinson (1978: 20-26), Olivier (Müller 1979: 68-69), Gearheart (1980: 368-369), Painter (1980: 35), Haasbroek and Jooste (1981: 37-41, 60-72), Torrance (Gowan, Khatena and Torrance 1981: 168-169), Lowenstein (1982: 33), Elshout, Kouwenhoven and Tromp (1983: 210-211) and Neethling (1983: 31-34).

ADDENDUM B

INFORMATION SHEET 2: INFORMATION SHEET FOR TEACHING STAFF CONCERNING INTELLECTUALLY GIFTED PUPILS

DEFINITION

By intellectually gifted pupils are meant pupils whose performance is consistently exceptionally high in all or most school subjects. Research has shown that these pupils display certain cognitive, affective and social characteristics and consequently certain educational needs that have to be satisfied. However individual pupils will not display all these characteristics.

THE CHARACTERISTICS OF THE INTELLECTUALLY GIFTED PUPIL

- The intellectually gifted pupil is highly successful as regards scholastic performance, obtains exceptionally high marks and has an excellent intellectual capacity.
- He has the knowledge and skills required for studying a subject.
- His powers of concentration are excellent; he learns with ease and has excellent retention.
- He has the ability to complete a task and is thus persevering; he is goal directed and motivated.
- He is keenly observant and able to listen and look critically and analytically.
- He is exceptionally fluent in language. He has an extensive vocabulary, an understanding of the meanings of words and uses words correctly.
- He is characterised by outstanding powers of reasoning, clarity of thought and excellent powers of comprehension. Consequently he easily recognises relationships.
- He is able to perform extremely complex tasks.
- He has an exceptional intrinsic motivation to work, is enterprising as far as studies are concerned and acts on his own initiative.
- He has a strong desire for perfection and becomes impatient if work is not done to perfection.
- Routine classwork, particularly repetitive drill, soon bores him, which is why he sometimes completes only that part of a particular assignment that interests him and then goes on to some other assignment.
- He often takes unusual and unfamiliar short cuts in completing assignments.

353

- The intellectually gifted pupil is intensely interested in the world around him, explores a variety of facets of that world and has extensive knowledge of a wide variety of subjects.
- He has a keenly enquiring mind and asks unusual and sensible questions.
- He is intensely interested in the detail and complexity of a matter, as well as in the possible implications and the consequences.
- He has a desire to investigate and discover and is prepared to go beyond the normal confines of a problem.
- He displays great interest in, for example, the nature and origin of man and the nature and source of creation. He tends to philosophise on such matters.
- He has a variety of meaningful hobbies in which he finds considerable fulfilment.
- He reads about a wide variety of subjects, often making effective use of the resource centre.
- He takes a keen interest in and derives great pleasure from intellectual pursuits.
- He is attracted by the unusual and is interested in exploring it.
- The intellectually gifted pupil displays a sensitivity to problems and has the ability to come up with a variety of ideas for experimenting and solving problems.
- He is able to approach problems from a variety of angles and to generate and apply alternative ideas for solving problems.
- He has the ability to use his own original ideas and methods in solving problems and to combine various methods and ideas in achieving unprecedented results.
- He has the ability to define problems, formulate hypotheses, testing ideas and draw valid conclusions.
- The intellectually gifted pupil has the ability to respond to impressions with a variety of ideas and association of ideas.
- He displays exceptional judgement in reasoning logically about situations, applying knowledge and ideas, becoming aware of associations and drawing conclusions.
- He displays independence of thought by implementing his own ideas and methods in situations and does not accept authoritarian pronouncements as necessarily correct.

* He is more inclined to abstract thought and has the ability to proceed from the particular to the general.

* He often displays exceptional creative ability.

* He has vision regarding the future, the ability to learn from experience and to benefit by it.

* He is not inclined to take things for granted, usually wants to get to the heart of a matter and is analytical in this approach to complex material.

* He is usually interested in the cause-effect relation between matters, displaying insight in this regard.

* He is often sceptical, analytical and evaluative and is quick to notice inconsistencies as well as similarities, differences and defects.

* He sometimes tends to daydream if the subject matter is not interesting enough.

* His use of knowledge goes further than the mere recall of knowledge: in fact he sees new associations between parts of information and is able to combine elements in a fresh way.

* He can execute tasks and assignments with the minimum supervision and assistance from adults, can apply his own research methods in carrying out tasks independently of others and can investigate the results.

* He has an exceptional ability to express himself in, for example, art, music, dancing, drama, creative writing and model building.

* The intellectually gifted pupil is sometimes sensitive to criticism from others and also to the demands of others.

* He displays a sense of humour that may betoken hostility or friendliness.

* He has a zest for life and is game for almost anything, so much so that he is sometimes described as hyperactive.

* His behaviour is often well organised and purposeful with regard to carrying out assignments and solving problems.

* He has a highly developed sense of moral and ethical responsibility and is upset by unfairness and injustice.

* He is able to integrate conflicting impulses such as constructive and destructive behaviour.

* He has a realistic, positive self-image, enough self-confidence and a large measure of affective stability.

- He reacts positively to new, strange and incongruous or mysterious elements in his environment by investigating and manipulating them. He likes structure, order and consistency.

- The intellectually gifted pupil displays a high degree of idealism and demands and expects a great deal of himself.

- He displays an intense interest in the welfare of society and has the ability to understand, reason out and come up with solutions to social problems; he also has the desire to be of service.

- He gets on well with adults and may prefer the company of older pupils and adults to that of his peer group.

- He organises and takes the lead in group activities, often completely assuming control.

- He tends to criticise fellow pupils for unrealistic ideas and thoughtlessness.

- He sometimes tends to be a loner and to withdraw from the group.

- Sometimes he does not show much interest in extramural activities.

- At times he may be somewhat aloof towards others.

THE CHARACTERISTICS OF THE GIFTED PUPIL WHO DISPLAYS EXCEPTIONAL CREATIVE ABILITY

- This pupil has the ability to come up with a variety of original and qualitatively excellent ideas about a particular matter.

- He has the ability to elaborate ideas and to integrate the main idea and subsidiary ideas into a whole.

- He displays flexibility of thought which makes adjustment to new ideas and circumstances possible and enables him to perceive a variety of solutions to the same problem.

- The gifted pupil with exceptional creative abilities displays a particular sensitivity to the world around him. The reality of life interests him, and experiences prompt him to enquire about the world around him.

- He displays a particular sensitivity to problems and he can recognise, circumscribe and formulate them and suggest solutions.

- He is able to solve problems down to the smallest detail: he therefore achieves a more accurate and profound perspective than others.

356

* This pupil usually has a high intellectual capacity.

* In what is being observed he can perceive, understand, interpret and explain the interaction and relationships between the whole and the parts.

* He has the ability to analyse, organise and synthesise data or observed information in order to form an overall picture.

* Familiar objects and situations are approached in an unusual way and he is able to view a matter from a variety of perspectives.

* He displays a willingness to become involved in the complex and the unconventional.

* He often displays an intellectual playfulness and tends to fantasise.

* He learns through experimenting and through manipulating objects rather than through authoritarian methods of teaching; he seeks answers to questions in his own characteristic way.

* He is able to keep himself occupied without being stimulated, displays a great deal of untiring industry, is dedicated and can lose himself in his work for long periods without showing signs of fatigue. He often goes beyond the confines of an assignment.

* This pupil displays a sensitivity to beauty and responds emotionally to the aesthetic.

* He displays affective sensitivity and is aware of his own impulses and irrationality.

* He displays a high degree of inquisitiveness in investigating or examining objects, ideas, situations and events.

* Depending on the situation, he is capable of conformity or nonconformity.

* He is not overly dependent on his parents, and the parent-child relationship is healthy.

* He displays independence of thought and behaviour, is individualistic and self-sufficient and prefers to work on his own.

* At times he may seem to be daydreaming, whereas in fact he is immersed in creative thought.

* He displays flexibility and adaptability of thought, which makes it easy for him to depart from the beaten track - and he is not afraid of the consequences of doing so.

* He has a positive, realistic self-image and the self-confidence to question the commonplace and the generally accepted.

- He has the courage to be receptive to outward and inward experiences, to try to attain the apparently impossible and to run great risks.
- He believes in himself and rejects outside criticism if he considers it to be unjustified.
- At times he tends to be an introvert.
- He has unconventional occupational aspirations.

REFERENCES

Cutts and Moseley (1958: 18-26), Smaltz and Mathisen (Crow and Crow 1963: 37-38), Gold (1965: 80), Hildreth (1966: 166-168), Gallagher (1975: 34), Michael (Stanley, George and Solano 1977: 146-147), Martinson (1978: 20-26), Olivier (Müller 1979: 68-69), Gearheart (1980: 368-369), Painter (1980: 35), Haasbroek and Jooste (1981: 37-41, 60-72), Torrance (Gowan, Khatena and Torrance 1981: 168-169), Lowenstein (1982: 33), Elshout, Kouwenhoven and Tromp (1983: 210-211) and Neethling (1983: 31-34).

ADDENDUM C

INFORMATION SHEET 3: INFORMATION SHEET FOR PARENTS AND TEACHING STAFF CONCERNING GIFTED UNDERACHIEVERS

1. INTRODUCTION

Although the definition of underachievement often gives rise to problems and it is a matter of considerable controversy among researchers, it is nevertheless generally accepted that the term underachievement refers to the underactualisation of potential ability. In the light of this, gifted underachievers can be defined as pupils who have exceptional intellectual capacity and other personal potentialities but who for various reasons do not fully actualise them. These pupils' performance in, for example, their different school subjects consequently does not reflect their excellent potential or capabilities.

It is possible to distinguish the following categories of gifted underachievers:

* The gifted pupil who does well at school but does not fully actualise his capabilities.

* The gifted pupil whose performance becomes steadily weaker, who falls further and further behind, and may even fail.

* The gifted pupil who chronically underachieves and whose problems manifest themselves at an early age.

* The gifted pupil who, owing to circumstances, underachieving behaviour is transitory.

If the phenomenon of gifted pupils who underachieve occurred to a limited extent only, it would not be such a serious problem. However research has shown that as high a proportion as 50 % of all gifted pupils may be underachievers. Surely this fact underscores the seriousness of the situation.

According to various researchers, it is important that the available manpower potential should not only be explored but utilised to the maximum. The underutilisation of high-level potential creates shortages in the higher occupational groups in particular. Gifted pupils, and among them gifted underachievers, have the potential to make good these shortages. The erosion of this potential hampers the progress of a country, particularly in the economic, social and political spheres. One of the things that research has revealed is that gifted underachievers do not fully develop their leadership qualities, are less likely to choose subjects such as Mathematics and a third language, have lower occupational and educational aspirations, fail more often, show a greater tendency to leave school early and are less likely to go on to tertiary education than one might expect, considering their outstanding abilities. The result is a heavy loss of high-level manpower which, considering the manpower shortage, the RSA can ill afford. If, moreover, it is borne in mind that the actualisation of abilities is important for the optimal development of personality and learning characteristics, the problem of gifted pupils who underachieve is of the utmost importance.

2. THE CAUSES OF UNDERACHIEVEMENT

Research has laid bare various causes of underachievement. However, as will appear from the discussion that follows, the phenomenon is extremely complex. Consequently it is usually not possible to attribute underachievement to a single cause. In all probability several causes will contribute to underachievement in a particular pupil.

2.1 FACTORS IN THE HOME

Various researchers believe that the causes of underachievement lie in the underachiever's home background. Naturally, parents as the primary educators of their children can contribute towards the negative development of learning and personality traits and therefore to underachievement. Research has shown that the home background of underachievers has the following characteristics that can contribute to underachievement:

* The relationship of trust, authority and understanding between fathers and children is negative or absent. There appears to be a communication problem in the home.

* The father as a figure of authority and someone to identify with is often completely lacking.

* Parents often make unrealistic demands on their children as regards their performance at school, the result being that the children reject the parents' values.

* In particular the father is domineering, shows no warmth to his children and gives them no recognition for their achievements.

* There are social and emotional problems in the home.

* The parents, fearing that they will lose their position of authority, feel threatened by their children's achievements.

* Parents, often anxious when their gifted children differ so completely from members of their own age group, feel that the pattern of their lives is being disrupted.

* Parents are extremely strict and harsh as regards discipline and punishment, or they are unduly permissive about their children's upbringing.

These circumstances result in gifted pupils displaying feelings of inferiority and believing themselves unable to achieve anything. They are also distrustful, apathetic and hostile. Convinced that their parents are dissatisfied with them, they feel rejected by their family. The result is that they revolt against authority, displaying hostility to their parents and other adults. These pupils lack the motivation to achieve at school, display a negative attitude to their studies and consequently do not do their homework. In addition they are helpless and do not take responsibility for their actions or behaviour.

2.2 FACTORS IN THE SCHOOL SITUATION

Some researchers believe that the teacher who is inadequately qualified, who is unequal to his task and who lacks self-confidence plays the greatest part in causing underachievement, particularly among gifted pupils. Although this is probably an extreme view, one should nevertheless bear it in mind.

The following factors in the school situation can contribute to underachievement:

* Gifted pupils lose interest in their schoolwork if it is not challenging enough.

* Sometimes teachers lose sight of the fact that the learning process itself takes place within a particular social and personal context.

* Sometimes teachers are not sensitive to gifted pupils' emotional and intellectual needs.

* Sometimes teachers are too authoritarian and obsessed with imparting knowledge to their pupils.

* Some teachers do not take enough interest in eliciting and prompting initiative among their pupils.

* Some teachers are not prepared to do more than is required in the teaching-learning situation, they themselves being intellectually inactive and therefore not experts in their subject.

* Some teachers like to display and prove their superior knowledge at all costs.

* Some teachers make unrealistic demands and set unrealistic standards, resorting to warnings, threats, ultimatums and disparaging remarks in class.

* Sometimes teachers present subject matter in the course of the lesson in such a way that the pupils are not encouraged or challenged to actualise their abilities.

These factors result in gifted pupils being so negatively influenced that they despise the school and the teachers and associate with pupils who display the same attitude. They have no motivation to achieve scholastically, neglect to do their homework, take no part in the teaching-learning situation and have no aspirations for the future or for any particular occupation.

2.3 LEARNING DISABILITIES

Obviously, specific learning disabilities can have a negative effect on scholastic achievement, and in the case of gifted pupils such disabilities can indeed be conducive to underachievement. The following examples illustrate this point:

Various researchers point out that gifted pupils who underachieve have ineffective study methods and a negative attitude to their studies. Since there is a positive correlation between effective methods of study and positive attitudes to study on the one hand, and scholastic achievement on the other, it can be concluded that ineffective study methods and negative attitudes to study among gifted pupils contribute to underachievement.

Reading ability plays a decisive role in scholastic achievement. Researchers point out that it should not be taken for granted that gifted pupils have an advantage over ordinary pupils in this respect. Sometimes gifted pupils do not show a strong interest in reading activities. Consequently they can build up a deficit in their reading, which can impair the development of their learning characteristics. Research has in fact shown that some gifted pupils have reading problems that contribute to underachievement.

2.4 PERSONALITY TRAITS AS A POSSIBLE CAUSE OF UNDERACHIEVEMENT

Research shows that both gifted underachievers and underachievers in general have certain characteristics in common. It is not yet clear whether these personality traits are the cause or the result of underachievement, but what is clear is that there is a significant connection between underachievement and certain traits insofar as these traits can also serve to identify underachievers.

According to some researchers, underachievers display the following personality traits:

* They have a negative self-concept, tend to evaluate themselves negatively and display strong feelings of inferiority that are manifested in distrust, lack of interest, aloofness and even hostility.

* They feel rejected by their families and sense that their parents are dissatisfied with them.

* They display hostility to authority figures and they distrust adults.

* They feel that they are being treated unjustly.

* They hate school and their teachers and choose friends who have the same attitude.

* At times they may rebel.

* Their motivation to work is very poor and they have a scholastic backlog.

- Their methods of study are often faulty, they do little homework and they often fall asleep when they are supposed to be studying.
- They have little perseverance, tend to be less self-assertive and, in the class situation, they tend to withdraw.
- Usually they do not rise to positions of leadership and they are not very popular with their peer group.
- They display a greater degree of immaturity than the achievers do, for example, lack of self-discipline, a tendency to procrastinate, an unwillingness to perform tasks, wavering concentration, impulsive action, unwillingness to face up to unpleasant situations, and irresponsible conduct.
- Often they have no hobbies, the result being that they are frequently idle.
- Usually they have no high ideals and are therefore unsure of an occupation for themselves.
- They manifest considerable aggression, anxiety and tension.
- They tend to be depressed and uncertain.
- They may be shy, withdrawn, aloof, cold and unsociable, which suggests a longterm reaction to a sense of being threatened and disturbed.
- Underachievers also show signs that they have not yet developed the self-insight needed to manipulate their environment effectively, consequently they are unable to adopt a positive attitude to learning.
- They experience a diffuse identity, the result being inadequate actualisation of their capabilities.
- It appears that gifted underachievers devote most of their mental energy to their efforts to cope with their poor self-image, consequently having no energy left for actualising their giftedness to the full.

2.5 UNDERACHIEVEMENT AS THE REFLECTION OF AN OPTION EXERCISED BY THE GIFTED PUPIL

Certain researchers see other causes of underachievement in gifted pupils. It is necessary to discuss these views briefly.

Various researchers believe that underachievement may also be the result of an option exercised by gifted pupils. According to this view, gifted pupils may for various reasons prefer to underachieve. In this regard the role played by the particular community to which a particular gifted pupil belongs should not be underestimated. Researchers point out that if the community concerned has a disapproving attitude to high scholastic achievement (such communities do exist), the gifted pupil may underachieve. In such cases the gifted pupil may prefer to conform to the norms of his community. From the literature it is also evident that gifted girls are often under community pressure to conform as regards the traditional "subordinate" role of the woman. Consequently these girls often prefer not to make themselves conspicuous and therefore tend to underachieve. There are also communities where scholastic achievements are regarded as a sign of weakness. This view can naturally also have a negative effect on the development of abilities. Frequently gifted pupils also prefer to underachieve because they fear that being different will alienate them from their peer group.

2.6 PERSPECTIVE

From the foregoing it is clear that a number of extremely complex factors contribute to gifted pupils' underachievement. Consequently it is usually impossible to pinpoint a single cause or the cause of underachievement. Underachievement is therefore not a superficial phenomenon that can be approached simplistically. Nor is it a phenomenon that can easily be modified: it is a deep-seated problem that affects the underachiever's whole being.

3. THE GIFTED UNDERACHIEVER'S NEED FOR THERAPY

Among parents and in education circles it is frequently not sufficiently appreciated how serious the problem of gifted underachievers is. Possibly one of the greatest drawbacks to efforts to alleviate the problem is that its nature and extent are invariably underestimated. As long as underachievement among these pupils is ascribed to stubbornness, laziness or antagonism to particular teachers, little that is constructive can be done. Underachievement, as already indicated, represents a particular attitude to life - a way of life - in the underachiever. It is also important to note that underachievement does not manifest itself in poor scholastic achievement only, but that it also has a negative effect on the development of personality and leadership characteristics, sporting achievements, co-operation with teaching staff, etc. It has been pointed out that a significant proportion of high-level manpower is going to waste in the RSA as a result of underachievement among gifted pupils. For this reason the early identification of these pupils and the necessary therapeutic support for them are of cardinal importance. It is important to bear in mind that the mere identification of gifted underachievers does not solve the problem of underachievement. Although research does not always paint a very positive picture of the value of therapy for these pupils, it is nevertheless possible to conclude that the prognosis is good if identification takes place early, if therapy is given on an individual basis over long periods and is undertaken by a variety of experts, if the peer group and parents are involved in it, and if positive attitude formation in regarding the problem takes place in all concerned.

4. GIFTED UNDERACHIEVERS' NEED OF SPECIAL EDUCATION PROVISION AND INCLUSION IN EDUCATIONAL PROGRAMMES FOR GIFTED PUPILS

From the foregoing sections it is apparent that gifted underachievers cannot cope in the ordinary classroom or in the mainstream of education. Nor does the direct placement of these pupils in educational programmes for gifted pupils offer a solution, because of the higher scholastic demands made on them. Somehow the gifted underachiever must be led out of the unfavourable, unenviable situation in which he finds himself. Research points to the value of special educational programmes for gifted underachievers in which individual needs are catered for. In such programmes attention ought to be given to individual and group therapy, the modification of teaching strategies, parent involvement, etc.

It should also be noted that gifted underachievers actually show a need to be included in educational programmes for gifted pupils. However these pupils should be included in such programmes only after their underachievement has been remedied or largely remedied. Naturally their progress should be very carefully monitored.

SOURCES

Shaw and Brown (1957: 199), Cutts and Moseley (1958: 133), Schmidt (Shertzer 1960: 177), Sumption and Leucking (1960: 145), DeHaan (1963: 102-103), Trillingham and Bonsall (Crow and Crow 1963: 210), Roth and Meyersburg (quoted by Gowan and Demos 1964: 303-304), Gold (1965: 386) Dickenson and Truax (1966: 244), Du Toit and Van der Merwe (1966: 374), Goldberg et al. (Gallagher 1966: 257), Broedel, Ohlson and Proff and Shaw and Brown, quoted by Shaw and McCuen (Gallagher 1966: 259, 262-264), Hildreth (1966: 251, 428, 430, 432, 434), Thomas and Grescimbeni (1966: 77), Roth and Puri (1967: 280), Norfleet (1968: 977), Morrison (1969: 171), Raph, Goldberg and Passow (1969: 6), Helfenbein (1970: 3 785-3 786), Engelbrecht (1973: 3, 16), Gallagher (1975: 352-353), O'Leary, quoted by Grotberg (Barbe and Renzulli 1975: 209), Lanza and Vassar (Barbe and Renzulli 1975: 317), Newland (1976: 91), Clark (1979: 280-281), Jacobs (Müller 1979: 42), Roos (1980: 24, 41, 46-48, 100), Haasbroek and Jooste (1981: 47, 52-56), Dowdall and Colangelo (1982: 181) and Nel (1983: 19-20).

ADDENDUM D

INFORMATION SHEET 4: INFORMATION SHEET FOR PARENTS AND TEACHING STAFF CONCERNING SPECIFICALLY GIFTED PUPILS

DEFINITION

By specifically gifted pupils are meant those gifted pupils whose performance is consistently exceptional in only one subject or school activity, in some school subjects or school activities, or in respect of a certain personal quality or qualities. Different categories of specific giftedness can be distinguished, as indicated below.

EXCEPTIONAL APTITUDE, INTEREST AND ABILITY IN A SPECIFIC ACADEMIC FIELD

- This specifically gifted pupil has a high intellectual capacity.
- He shows a high degree of aptitude and strong interest in the specific academic field in which he achieves.
- His cumulative scholastic achievement in this field is also exceptionally high.
- He displays exceptional perseverance in his ability to achieve in this field.
- At times he may appear to be neglecting other areas of his work in the interest of the one in which he is achieving.

EXCEPTIONAL CREATIVE ABILITIES

- cf. ADDENDUM A or B in this connection.

EXCEPTIONAL LEADERSHIP QUALITIES

- This specifically gifted pupil is able to control his emotions, to avoid becoming emotionally involved in others' problems and to act purposefully in a crisis.
- He has a realistic, positive self-image and knows his own limitations and potential.
- His behaviour indicates considerable individualism; he is able to judge situations and has the courage of his convictions to take action in bringing about changes. Because of this he can think independently and also act and carry out tasks and assignments independently.
- He displays a large measure of self-confidence, motivation, determination and perseverance and is future oriented.
- His life-style is characterised by reliability, diligence, devotion to duty, self-discipline, modesty and recognition of others' achievements.

* He is willing and able to take the lead in a group and to shoulder the responsibility of leadership.

* He is able to form positive interpersonal relations and to promote and ensure co-operation.

* Because of his sense of responsibility, his purposefulness, perseverance, determination, self-discipline, diligence, devotion to duty and recognition of others, he is someone to look up to.

* He is prepared to take the initiative, particularly in problem situations.

* He has the ability to organise, to analyse situations quickly and to guide and direct matters by organising people and manipulating circumstances.

* He displays a sensitivity to others' feelings and the situations in which they find themselves.

* He has the ability to organise, to analyse situations quickly and to guide and direct matters by organising people and manipulating circumstances.

* He displays a sensitivity to others' feelings and the situations in which they find themselves.

* He maintains positive interpersonal relations, has a friendly and engaging disposition, fits in easily with groups and gets on well with both his peers and his superiors.

* He is willing to join in communal activities and makes his own contribution by initiating new ideas.

* He has the ability to adapt to changing circumstances and therefore displays a certain flexibility of thought and action.

* Depending on circumstances, he is capable of either conformity or non-conformity.

* To other pupils and perhaps even adults he is someone to look up to and is accepted as a leader.

* He is able to assess other people's abilities and characteristics and therefore has insight into their actions, motives, values and preferences.

* He is able to form lasting relationships with members of his peer group and with adults.

* He displays a certain genuineness, candour, even charisma, which attracts people and inspires confidence.

* He displays a large measure of social responsibility, in the sense that he is concerned about the problems of life and makes determined efforts to find solutions.

* He appreciates and respects others' opinions and ideas.

* He usually has a healthy, balanced outlook on life and a special sense of humour.

* He usually has an above average intellectual capacity and, scholastically, he does fairly well.

* Sometimes he tends to dominate other pupils, but in such a way that he does not give offence.

* He usually respects the authority of superiors and generally gets on well with teachers.

* He often displays a certain humility, one of the hallmarks of true greatness.

EXCEPTIONAL APTITUDE FOR AND COMMAND OF LANGUAGE AND THE CREATIVE DRIVE TO DEVELOP INTO A WRITER OR POET

* This specifically gifted pupil has a good vocabulary and understanding of syntax, as well as the ability to formulate ideas.

* He understands difficult words, concepts and terms and uses them correctly.

* He is able to communicate with others at the level required in a particular conversational situation.

* He can reason matters out logically, with an apt choice of words and word play.

* He relates or writes imaginative and interesting stories and shows the ability to write prose/poetry/drama.

* He displays a keen interest in literature, reads literary works, is interested in the writers' style and is able to analyse it critically.

* His writing testifies to imaginative use of words, imagery and other figures of speech.

* He has a good intellectual capacity.

* His distinct creative abilities are reflected in the work he does in this field.

EXCEPTIONAL ABILITY FOR ACTING AS WELL AS FOR WRITING OR PRODUCING PLAYS

* This specifically gifted pupil knows and understands human nature and behaviour.

* He understands the complexity of society, thanks to his insight into the varied nature of man's motives and emotions and the conflicts that arise from them.

* For the reasons mentioned above, he shows understanding of the content of a drama (which represents a "slice of life") and is able to interpret that content correctly through dramatisation.

* He therefore reveals insight into the situations (conflict, romance, humour, heartache) depicted in the drama and correctly interprets them.

* He is able to give expression to emotions through intonation, bearing and gesture and has an exceptional ability to dramatise feelings and experiences.

* He is intensely interested in activities surrounding drama and particularly in the production and staging of plays; he likes it if the audience becomes involved.

* He derives great satisfaction from activities connected with this subject.

* He writes and produces his own plays.

* His achievements in this field bear testimony to his creative ability.

* He has a good intellectual capacity and a sharp critical, aesthetic judgement.

EXCEPTIONAL ORATORICAL ABILITY

* This specifically gifted pupil is very well read.

* He has a wide general knowledge and is conversant with world politics, national affairs and current news.

* He has the ability to argue logically and consequently has exceptional powers of persuasion in putting his views across.

* He has a superior command of language as well as good voice control.

* He is most interested in appearing before an audience (in other words, in public speaking) as well as in social interaction and involvement with people.

* He has the ability to hold an audience with interesting, entertaining and logical reasoning.

* He has a good intellectual capacity and his scholastic performance is satisfactory.

EXCEPTIONAL APTITUDE FOR SINGING AND MUSIC AS EVIDENCED BY THE MASTERLY PERFORMANCE OR COMPOSITION OF MUSICAL PIECES

* This specifically gifted pupil has a powerful inner need to express himself (his feelings and emotions) through sound.

- His whole life testifies to a particular musical bent which influences and colours almost all other aspects of his life; he has an almost insatiable desire for music.
- He has good voice quality and is able to sing or hum in tune.
- He can harmonise his voice with other voices without the aid of sheet music.
- He is intensely interested in music, enjoys activities connected with music and delights in listening to music.
- He likes giving musical performances with others.
- He has musical discernment and interprets compositions with feeling.
- He has a natural sense of rhythm, pitch and timbre.
- His co-ordination in music is good and his understanding of musical symbols is excellent.
- He has the ability to remember melodies and to learn a new melody or rhythm quickly.
- He is able to complete an unfinished melody.
- He can play musical instruments by ear and interpret and compose music with feeling, at an elementary as well as an advanced level.
- He has a certain musical sensitivity which at times seems to verge on the mystical.
- His achievements in this field testify to his exceptional creative ability.
- He therefore has the special skills and knowledge to be able to achieve in this field.

SUPERIOR ABILITY, INTEREST AND MOTOR AND RHYTHMIC SKILLS IN THE INTERPRETIVE ART FORMS SUCH AS BALLET AND EXPRESSIVE DANCE

- This specifically gifted pupil has a spontaneous and irresistible urge to give expression to his feelings through physical movement.
- He is able to express his emotions through music and expressive dance.
- He has excellent physical health, is physically attractive, has considerable energy and is prepared to spend many hours practising.
- He is agile and lithe and capable of outstanding co-ordinative movement, enabling him to match movement and rhythm to music.
- He is intensely interested in dancing and dance forms and is able to improvise and develop original dances of his own.

- He has a very strong sense of music.
- He has the ability to achieve in this field.

SUPERIOR ARTISTIC APTITUDE FOR THE CREATIVE ARTS

- The pupil displays a keen perception of and insight into people and the world around him.
- His insight into people and the world around him testifies to a qualitative otherness and depth.
- He experiences the need to give expression to his feelings and emotions through creative activities.
- He is characterised by a particular sensitivity and a rich imagination.
- He is seriously and personally involved in the object of creation.
- He has an intense interest in and enthusiasm for art and is therefore involved in a host of artistic activities and pursuits, for example modelling, drawing and painting.
- His long-standing interest in art applies not only to the technical aspects, but also to creative and experimental features.
- He shows an interest in the work of other artists, is able to appraise and appreciate it and learn from it.
- The creative work he produces testifies to exceptional creative powers.
- He is prepared to try out new materials and experiences, and to experiment. Consequently he comes up with new and original ideas that he would like to portray.
- He displays great technical skill in the art form he practises and is prepared to devote much time and energy to refining his technique.
- He displays a strong and enduring desire for perfection in his chosen art form.
- He has the exceptional ability to rearrange experiences in such a way that they lead to something new and meaningful.
- In practising his art he displays dedication and perseverance, good concentration and a capacity for independent, self-motivated work. His high degree of dedication overshadows almost all his other pursuits.
- He derives great satisfaction from what he has created.
- He is capable of innovation in his choice and use of materials.

- He displays a higher degree of maturity than other members of his peer group, as well as a large measure of self-confidence in the process of creation.

SUPERIOR APTITUDE FOR AND MANUAL SKILL IN MECHANICAL AND OTHER DESIGNING

- This specifically gifted pupil shows an interest in design and is able to repair and assemble mechanical equipment.
- His hobbies testify to his interest in mechanical and other designs.
- He becomes so immersed in his projects that they take up much of his time.
- His interest and skill go further than the mere creation of a concrete object, construction or model: in reality he is looking for the causes or reasons for and effects of certain phenomena.
- He has good motor skills as well as particular technical skills.
- He displays insight into mechanics, is well read on the subject and manifests exceptional creative ability as regards mechanical constructions, models, inventions and designs.
- He is not easily discouraged by failure and therefore perseveres with his projects.
- He enjoys reading about and discussing the subject.
- He has a fund of ready knowledge concerning the project he is busy with.
- He sets himself high standards of workmanship, is not easily satisfied with his own performance and strives for perfection and precision.
- He also displays superior aptitude in the natural sciences and mathematics; he has good intellectual and creative abilities.

SUPERIOR KINAESTHETIC (PSYCHOMOTOR) ABILITY

- This specifically gifted pupil displays outstanding physical characteristics such as exceptional speed, strength, suppleness, fleetness of foot, eye-hand co-ordination, grace, ball control, concentration and endurance.
- He is fired by a strong desire to excel in the sport of his choice.
- He prefers outdoor pursuits and is interested in sporting activities.
- His performance in sport is outstanding and he often excels in more than one sport.
- His physical health and fitness is excellent.

* He usually has a spartan life-style.

* He enjoys physical activities and exercise, regards these as an indispensable part of his daily routine and has considerable energy.

* He has high ideals regarding the kinds of sport in which he excels.

* He enjoys participation, particularly in competitive sport.

* He often displays strong leadership qualities and has above average intellectual capacity.

SOURCES

Iglehart (Shertzer 1960: 123-125), DeHaan (1963: 25-29), Smaltz and Mathisen (Crow and Crow 1963: 37-39), Hildreth (1966: 553-559), Rice (1970: 44-45), Gowan and Bruch (1971: 17-22), Brackenbury (Gibson and Chennells 1976: 73-87), a guide compiled by Human Individual Potentialities (1977: 34-35), Perrone, Karshner and Male (Colangelo and Zaffrann 1979: 78-80), Painter (1980: 16-22), Haasbroek and Jooste (1981: 37-45) and Khatena (1982: 85-103).

ADDENDUM E

INFORMATION SHEET 5: INFORMATION SHEET FOR TEACHING STAFF CONCERNING CULTURALLY DISSIMILAR GIFTED PUPILS

1. INTRODUCTION

Giftedness does not manifest itself in a vacuum. Gifted pupils are members of a particular family, family circle, community, school and cultural group. This connection with a particular group or groups makes a distinct contribution to the individual's cultural information. Researchers point out that giftedness derives partly from an early interaction with a stimulating environment and that cultural or economic deprivation may be the cause of, for example, future underachievement. As cultural influences may in certain circumstances result in giftedness not being optimally developed, such influences should be taken into account in the identification procedure. Some researchers feel so strongly about the effects of these factors that they believe that the definition of the concept giftedness should always be culturally determined and that the researcher should bear in mind that giftedness as such always manifests itself in a particular cultural context.

2. THE INFLUENCE OF CULTURE ON THE MANIFESTATION OF GIFTEDNESS

2.1 AFFILIATION TO A PARTICULAR CULTURAL GROUP

It would appear that in the past it was often assumed in the USA that giftedness did not occur in certain groups, the result being that it remained undetected and went to waste. Terman (quoted by Duminy 1963: 69) concluded, however, that " ... no race or nationality has any monopoly on brains". Other researchers agree with this to a large extent, observing that greater interest in the discovery of giftedness in different cultural groups has led to a broadening of outlook as regards the identification procedure. It is important to remember that different cultural groups may differ in their views on the nature of giftedness. Accordingly, both the form assumed by the culture in question and the social and economic structure within it play a role in determining the views held in this regard.

2.2 DIFFERENCES WITHIN AN APPARENTLY HOMOGENEOUS CULTURAL GROUPING

Even within a particular cultural context there may be certain individuals or groups who, as regards their cultural identity, display an otherness which distinguishes them from the dominant culture to which they belong. The influence of culture on the manifestation of giftedness therefore goes further than the mere fact of an individual's being a member of a particular cultural group.

2.2.1 Language

If the language medium of a particular gifted pupil differs from that of the school he attends, or that of the community of which he is a member, the manifestation of giftedness will be affected.

Language is one of the most important mediators of culture. Often the individual's having a different language within a particular community excludes him from sharing in the cultural heritage of the dominant culture. Since the manifestation of giftedness is largely culturally determined, the gifted pupil whose language is different will find it difficult to reveal his giftedness in terms of the culture that is alien to him.

2.2.2 The community

A particular gifted pupil may belong to a smaller group within a larger community (for example diamond diggers, migrant workers, construction workers) that can almost be described as a subculture. Such a group may have different values to those of the dominant community to which it belongs. This group may, for example, disapprove of the manifestation of giftedness (because it does not place a high premium on intellectual capacity) or differ from the rest of the community as regards the ways in which giftedness is manifested. Thus great value may be attached to physical strength and skill, characteristics which are not very highly rated in a modern Western society. These influences may result in gifted pupils from such groups manifesting their giftedness in a way that is different from what might be expected of those belonging to the dominant culture.

2.2.3 The home background

As the primary educators of their children, parents help in the formation of their values, attitudes, aspirations and norms. The nature of this upbringing may differ radically from that prevailing in the rest of the community, or it may be lacking altogether. These differences can manifest themselves in the gifted pupil's developing his abilities *differently* to what is expected or, if the parents do not place a high premium on his giftedness, he may not develop them at all. The educational practices in the home can therefore result in giftedness not being positively developed, in its being manifested in unacceptable ways, or in its not being brought to fruition at all.

Researchers point out that socio-economic factors play a part in the manifestation of giftedness and conclude that low socio-economic status often results in giftedness not being optimally developed. Therefore pupils from such a background are often under pressure to leave school early (to supplement the family income), receive little support from the home and consequently lack high edcational aspirations. Often their vocabulary, values, norms and life-style differ so greatly from those of the rest of the pupils in the school that being at school is an alien or even meaningless experience to them. Various researchers have found that gifted pupils from a low socio-economic background are under greater stress in the home and that their scholastic performance is not as good as one would expect. Other researchers, however, point out that gifted pupils can come from any home background, no matter how poor, and the view expressed by Gallagher (Crow and Crow 1963: 40-41) is surely a timely warning: "The teacher should not dismiss the possibility that a child could possess intellectual gifts even if he wears poor or inadequate clothing, or comes from a slum, or has parents who never attend PTA meetings."

2.2.4 The school and the peer group

Gifted pupils are also members of a particular peer group. Because of the values subscribed to by the peer group, a gifted pupil may not actualise his abilities. It goes almost without saying that if the members of the peer group do not place a high premium on intellectual growth and scholastic status, the gifted pupil who actualises his abilities is faced with ostracism. Considering that researchers have found that certain gifted pupils are reluctant to show that they are different, one should not lose sight of the influence of the school and the peer group in the manifestation of giftedness.

2.2.5 Sex

Gifted girls are often under community pressure not to manifest their giftedness. Among many people the misconception still persists that women can only be homemakers, that it is unfeminine to display high intellectual ability and that women should conform and be submissive. From this one can conclude that the community often encourages the optimal development of giftedness in boys, but discourages it in girls. Owing to their psychological make-up, girls are also more susceptible to influence by the peer group and adults.

3. THE NECESSITY OF IDENTIFYING GIFTED PUPILS WHO ARE CULTURALLY DIFFERENT

Because of the manpower situation in the RSA it is important to develop the potentialities of every gifted pupil optimally. According to researchers it would appear that a large percentage of culturally different gifted pupils, particularly in the USA, are overlooked in the process of identification. It can be assumed that in the RSA with its heterogeneous population such gifted pupils will not escape this fate either. The optimal development of innate abilities is also an important if not the cardinal aspect of the process of growing up. In addition the poor development of abilities naturally has a negative effect on general personality development. The identification of these gifted pupils is therefore extremely important, not only in view of the manpower position in the RSA but also for the individual pupils themselves.

4. THE PROBLEMS SURROUNDING THE IDENTIFICATION OF GIFTED PUPILS WHO ARE CULTURALLY DIFFERENT

As is evident from the preceding sections, the manifestation of giftedness is influenced by cultural factors. This influence is often such that gifted pupils' scholastic performance is not as good as it should be, with the result that they do not stand out academically. Several researchers point to the limitations of some of the customary intelligence tests in the USA that are used for purposes of identification. As the intelligence tests in the RSA are to some extent based on American models, it can be assumed that these tests are subject to some of the same limitations. Cultural otherness often manifests itself in a language backlog. Traditional intelligence tests, however, rely heavily on verbal factors. According to various researchers, the accent should fall rather on the non-verbal media in the identification procedure. This does not always happen. The researcher is therefore faced with a dilemma: although cultural factors influence the manifestation of giftedness, most of the available media (also media other than intelligence tests) are subject to the same influences.

Accordingly the identification of gifted pupils who are culturally different should be treated with considerable circumspection:

* The use of group intelligence tests for the identification of gifted pupils who are culturally different is not to be recommended.

* The use of intelligence tests in the identification procedure should not figure too prominently.

* As far as possible, use should be made of non-verbal media or of the non-verbal sections of media such as intelligence and aptitude tests.

* An individual approach to the identification procedure should be maintained.

* Criteria that rely heavily on non-intellectual factors such as nominations, biographical information and personality traits should be given prominence in the identification procedure.

* The presence of leadership potential and creative powers should be seen as pointers to possible giftedness.

* Cut-off points for intellectual capacity and scholastic performance should, depending on circumstances, be adjusted downwards.

SOURCES

Anderson (Torrance 1960: 23), Angelino (Shertzer 1960: 96), Gallagher (Crow and Crow 1963: 40-41), Gowan and Demos (1964: 277), Gallagher (1966: 237), Thomas and Crescimbeni (1966: 21), Rice (1970: 247), Gowan and Bruch (1971: 76-80), Karnes, Zehrbach, Studley and Wright, quoted by Gallagher (1975: 369, 385), Gallagher (1975: 10, 379-380, 385), Lyon (Gibson and Chennells 1976: 22-23), Newland (1976: 201), Tongue and Sperling (1976: 2), Martinson (1978: 44, 57, 100), Clark (1979: 127-128), Painter (1980: 4, 13), Karnes and Collins (1981: 8), Torrance (Gowan, Khatena and Torrance 1981: 50-51), Harrington (1982: 115), Clark (1983: 183-186), O'Neill and Scollay (1983: 12), Ryan (1983: 155) and Tannenbaum (1983: 353-356).

ADDENDUM F

INFORMATION SHEET 6: INFORMATION SHEET FOR PARENTS AND TEACHING STAFF CONCERNING GIFTED PREPRIMARY PUPILS

DEFINITION

Gifted pupils are pupils who, by virtue of their latent or realised superior intellectual capacity and other personal potentialities, are consistently able to perform at an exceptional level and who can be identified by their outstanding performance.

As regards gifted preprimary school pupils, the following categories can be distinguished. Essentially, gifted preprimary school pupils are those who

- reveal a superior general or specific intellectual capacity;
- display exceptional creative powers as well as remarkably flexible and productive thought processes by introducing innovations;
- display exceptional psychosocial ability;
- show exceptional aptitude and ability in the visual arts, music, drama, dancing or creative writing;
- display superior kinaesthetic (psychomotor) ability.

THE CHARACTERISTICS OF THE GIFTED PREPRIMARY PUPIL

- This pupil asks many questions about his environment and about various topics, thus showing a high degree of inquisitiveness and curiosity.
- He remembers easily and well, for example stories, detail and numbers.
- He learns easily and quickly.
- From a very tender age he wants to do things for himself, like dressing and eating.
- He is more interested in the more advanced and "adult" things than his peer group is.
- He seeks answers and solutions to problems in an independent way.
- He develops more quickly and earlier than his peer group.
- He tends to dominate others, particularly his playmates, often taking over the leadership role in his group.
- He usually keeps himself occupied with one or more of his interests.
- He tends to fantasise.

- He displays considerable originality as regards toys, ideas and planning.
- He is an alert observer in stories and films, for example, he observes more than his peer group does.
- He displays sensitivity regarding aesthetic matters.
- He loves adventure and is very daring.
- He shows exceptional skill/interest in all sorts of art forms, such as painting, drawing, modelling, handicrafts, music and drama.
- He has an advanced vocabulary and command of language.
- He is able to read some written words or even sentences.
- He has a very long concentration span/good powers of concentration.
- He can count well and can do simple addition and subtraction.
- He can spot similarities and differences, for example he can group or fit similar toys, objects and shapes together or match them.
- He has an exceptional ability to plan and organise activities.
- He asks difficult questions, for example about death, justice, eternity and values in life.
- He is able to act independently and look after himself, for example he displays independence regarding toilet training, washing and dressing himself, socialisation and obtaining information.
- He is alert and quick thinking and is, for example, always ready with a pithy and apt reply.
- He is particularly handy/skilful in using simple tools such as cutlery and construction games.
- He is agile and well co-ordinated, for example in ball games, running and swimming.
- He is often a dreamer who surprises one with original plans, suggestions, ideas and witticisms.
- He likes things to be done correctly.
- He converses readily and entertainingly with older pupils and adults.

ADDENDUM G

CHECKLIST 1: STRUCTURED OBSERVATION BY PARENTS: IDENTIFICATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST

1. The checklist below should be completed in respect of the pupil and read with ADDENDA A, C and D.

2. If a pupil displays marked positive weightings in the majority of items, this may be an indication of giftedness.

3. Pupils who are possibly gifted should be assigned to a particular category of giftedness.

4. A particular gifted pupil may be assigned to more than one category.

5. Categories for which possibly gifted pupils should be nominated:

* Intellectual giftedness
* Specific giftedness

- Exceptional aptitude, interest and ability in a specific academic field.
- Exceptional creative ability.
- Exceptional leadership ability.
- Exceptional aptitude for and command of language, and creativity that may develop into an ability to write prose or poetry.
- Exceptional ability for acting, writing or producing plays.
- Exceptional oratorical ability.
- Exceptional aptitude for singing and music, as evidenced by the masterly performance or composition of musical pieces.
- Superior ability, interest and motor and rhythmic skills in the interpretative art forms such as ballet and expressive dance.
- Superior artistic aptitude for the creative art forms.
- Superior aptitude for and manual skill in mechanical or other designing.
- Superior kinaesthetic (psychomotor) ability.

* Underachievement by gifted pupils

N.B. THIS INFORMATION ON A PARTICULAR PUPIL SHOULD BE TREATED IN THE STRICTEST CONFIDENCE.

Name of pupil: Date:

Date of birth Standard

1. Make a cross in the column that best describes the pupil. Gifted pupils are not expected to display all the characteristics listed below.

	Low 1	Average 2	High 3
Positive attitude as regards going to school He enjoys academic activities and assignments.			
Perseverance He has the ability to persevere in completing a task, and is goal directed and motivated.			
Intellectual curiosity He has a large measure of intellectual curiosity, asks original and sensible questions, and wants to get to the bottom of things.			
Powers of observation He shows an ability to observe keenly.			
Variety of ideas He has the ability to come up promptly with a variety of ideas for solving problems, and to experiment with these ideas.			

	Low 1	Average 2	High 3
Application of knowledge He is able to approach problems from different angles, to generate alternative ideas for the solution of these problems, and to apply these ideas.			
Sensitivity to problems He is aware of problems and notices problems that others overlook; offers suggestions as to how problem situations can be changed or remedied.			
Originality He has the ability to use his own original methods in solving problems.			
Imagination He has the ability to respond to impressions with a variety of ideas and associations of ideas.			
Fascination with detail He displays an intense interest in the detail and intricacy of various issues and the implications involved.			
Aesthetic appreciation He enjoys and appreciates beauty in the arts and in nature.			
Independence of thought He displays independence of thought by putting his own ideas and methods into practice. He does not take the pronouncements of others for granted, but examines them critically and makes his own constructive contributions.			

	Low 1	Average 2	High 3
Independence of action He plans and organises his own activities, sets them in motion and assesses the results.			
Capacity for physical expression The extent to which he finds physical activities a pleasurable and enjoyable means of self-expression.			
Physical ability The extent of his co-ordination, timing, litheness and ability to take part in organised sport.			
Energy The amount of energy he has for participating in a variety of activities.			
Popularity He is popular among other pupils and gets on with them. A large measure of social interaction is evident.			
Acceptance of others His relations with others are characterised by sincerity and involvement. He seeks the company of others, enjoys it and shows warmth to others.			
Social maturity He shows a willingness and ability to work with others, shows sensitivity to others' needs and feelings, is considerate, and conforms to the code of behaviour.			

	Low 1	Average 2	High 3
Sense of humour He has the ability to laugh at himself, laughs easily and can see the comical side of situations.			
Self-sufficiency He is self-assured, happy and at ease in most situations.			
Emotional stability He can cope with the normal problems in life and can adapt to change.			
Emotional control He can give vent to his emotions in an appropriate way - uncontrolled behaviour is rare.			
Enthusiasm He engages in most activities gladly and wholeheartedly and sustains this enthusiasm for the duration of the project.			
Self-acceptance He understands himself and is aware of his own potentialities and limitations.			
Independence He has his own value system which governs his conduct. He sets great store by freedom of self-expression.			

	Low 1	Average 2	High 3
Self-assertion He can assert himself in a group situation.			
Aggression He can cope with his aggression and convert it into a positive force.			

2. Describe any circumstances at home or at school that may adversely affect the pupil's scholastic performance.

....

....

....

3. Describe any early indications of exceptional ability (for example speech, interests, physical development.)

....

....

....

4. Describe any problem experienced by the pupil (for example speech, hearing, emotional problem, physical problem).

....

....

....

5. Describe any serious health problem that may be detrimental to the pupil.

....

....

....

6. Describe any particular giftedness the pupil may have.

----

7. Describe any exceptional creative abilities the pupil may have.

----

8. Describe the pupil's occupational aspirations.

----

9. What are your hopes for the future of this pupil?

----

10. Describe the pupil's reading habits (the nature of these habits and the time devoted to reading).

----

11. Describe the pupil's hobbies and specific interests.

----

12. Parent's rating of the pupil.
After careful consideration of all the particulars in this document, as well as those in ADDENDA A, C, and D, the pupil is

* RATED/NOT RATED AS POTENTIALLY GIFTED.

Category of giftedness:

Reasons for rating and category of giftedness in question:

----

13. Parent's signature

Date

SOURCE

Adapted from Clark (1979: 436-441).

---

* Delete whichever does not apply.

ADDENDUM H

CHECKLIST 2: STRUCTURED OBSERVATION BY TEACHING STAFF: IDENTIFICATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST

1. The checklist below should be filled in for the pupil and should be read with ADDENDA B, C, D and E.

2. If a pupil displays marked positive weightings in the majority of items, this may be an indication of giftedness.

3. Pupils who are possibly gifted should be assigned to a particular category of giftedness.

4. A particular gifted pupil may be assigned to more than one category.

5. Relevant categories for which possibly gifted pupils should be nominated:

   * Intellectual giftedness
   * Specific giftedness

     . Exceptional aptitude, interest and ability in a specific academic field.

     . Exceptional creative ability.

     . Exceptional leadership ability.

     . Exceptional aptitude for and command of language, and a creativity that may develop into an ability to write prose or poetry.

     . Exceptional capacity for acting, or writing or producing plays.

     . Exceptional oratorical ability.

     . Exceptional aptitude for singing and music, as evidenced by the masterly performance or composition of musical pieces.

     . Superior ability, interest and motor and rhythmic skills in interpretative art forms such as ballet and expressive dance.

     . Superior artistic aptitude for the creative art forms.

     . Superior aptitude for and manual skill in mechanical or other designing.

     . Superior kinaesthetic (psychomotor) ability.

   * Underachievement by gifted pupils

   N.B. THIS INFORMATION ON A PARTICULAR PUPIL SHOULD BE TREATED IN THE STRICTEST CONFIDENCE.

Name of pupil: ____________________ Teacher: ____________________

Date of birth: ____________________ Subjects taught to pupil: ____________________

Standard: ____________________ Date: ____________________

COGNITIVE FUNCTIONING

1. On the basis of observation in and outside the classroom, please answer the following questions:

		YES	NO
a.	As regards scholastic performance, is this pupil among the top 10 % of achievers?	.....	.....
b.	As regards intellectual capacity, is this pupil among the top 5 % of intelligent pupils?	.....	.....

2. Make a cross in the column that best describes the pupil's cognitive functioning. Gifted pupils are not expected to display all the characteristics listed below.

	Slight 1	Average 2	Considerable 3
Knowledge and skills The pupil has the knowledge and skills required for the study of a particular subject.			
Powers of concentration He has the ability to concentrate.			
Perseverance He has the ability to persevere in completing a task and is goal directed and motivated.			

	Slight 1	Average 2	Considerable 3
Intellectual curiosity He has considerable intellectual curiosity, asks original and sensible questions, and wants to get to the bottom of things.			
Challenges He likes challenges in the form of difficult problems, assignments and material to work on.			
Powers of observation He has the ability to observe keenly.			
Linguistic ability His use of language is characterised by fluency, extensive vocabulary, understanding of the meanings of words and the correct use of words.			
Variety of ideas He has the ability to come up promptly with a variety of ideas for solving problems. He also experiments with these ideas.			
Application of knowledge He is able to approach problems from different angles, to generate alternative ideas for the solution of these problems, and to apply the ideas.			

	Slight	Average	Considerable
Sensitivity to problems He is aware of problems and notices problems that others overlook. He offers suggestions as to how problem situations can be changed or remedied.			
Originality He has the ability to use his own original methods in solving problems.			
Imagination He has the ability to respond to impressions with a variety of ideas and associations of ideas.			
Powers of reasoning He has the ability to reason logically about a situation, to apply knowledge and ideas, and to see associations.			
Scientific approach to problem solving He has the ability to define a problem, to form hypotheses, to test ideas and to draw valid conclusions.			
Independence of thought He displays independence of thought by putting his own ideas and methods into practice. He does not take the pronouncements of others for granted, but critically examines them and makes his own constructive contributions.			

	Slight 1	Average 2	Considerable 3
Independence of action He plans and organises his own activities, sets them in motion and assesses the results.			
Independent performance He has the ability to carry out tasks and assignments with a minimum of supervision and assistance from adults and to use his own initiative in applying research methods in order to carry out tasks independently of others.			
Fascination with detail He displays an intense interest in the detail and intricacy of various issues and the implications involved.			
Aesthetic appreciation He enjoys and appreciates beauty in the arts and nature.			

PHYSICAL FEATURES

3. Make a cross in the column that best describes the pupil's physical features.

	Low 1	Average 2	High 3
Capacity for physical expression The extent to which he finds physical activities a pleasurable and enjoyable means of self-expression.			

	Low 1	Average 2	High 3
Physical ability The extent of his co-ordination, timing, litheness and ability to take part in organised sport.			
Energy The amount of energy he has for participating in a variety of activities.			
Physical appearance Personal neatness, tidiness, and attention to dress.			

Mark the space that best typifies the pupil's build and bearing:

Build	**Bearing**
Small __________	Good __________
Average __________	Average __________
More developed than the average __________	Poor __________

SOCIAL ATTRIBUTES

4. Make a cross in the column that best describes the pupil's social attributes.

	Low 1	Average 2	High 3
Popularity The pupil is popular with other pupils and gets on well with them. A large measure of positive social interaction is evident.			

	Low 1	Average 2	High 3
Acceptance of others His relation with others testify to sincerity and involvement. He enjoys the company of others, seeks their company and shows them warmth.			
Status He fulfils the role of a leader and enjoys high status among his peers.			
Social maturity He displays the willingness and ability to work with others, shows a sensitivity to the needs and feelings of others, is considerate, and conforms to the code of behaviour.			
Sense of humour He has the ability to laugh at himself, laughs easily and can see the comical side of situations.			
Self-sufficiency He is self-assured, happy and at ease in most situations.			
Relation with teachers He is able to communicate well with teachers and has a frank, relaxed, personal relationship with them.			

AFFECTIVE CHARACTERISTICS

5. Make a cross in the column that best describes the pupil's affective characteristics.

	Low 1	Average 2	High 3
Emotional stability He is able to cope with the normal problems in life, and to adapt to change.			
Emotional control He is able to give vent to his emotions in an appropriate manner. Uncontrolled behaviour is rare.			
Positive orientation as regards experiences He displays a positive attitude to new assignments and experiences, is daring in a positive way and reacts positively to unusual or unexpected stimuli.			
Enthusiasm He embarks on most activities in a spirit of keenness and wholehearted participation, retaining this enthusiasm for the duration on the project.			
Self-acceptance He displays an understanding of himself and knows his own potentialities and limitations.			
Independence He has his own value system which govern his conduct. He sets great store by freedom of self-expression.			
Conformity His behaviour is influenced by others' expectations and desires.			

	Low 1	Average 2	High 3
Performance motivation He is concerned about his performance and wants to give of his best at all times.			
Self-assertion He can assert himself in a group situation.			
Aggression He can cope with his aggression and convert it into a positive force.			

6. Describe any behavioural problems that may limit the pupils' potential for studying.

7. Describe any unusual behavioural manifestations such as daydreaming, flights of fancy, etc. that may adversely affect the pupil's ability to learn.

8. Describe any of the pupil's outstanding learning characteristics that give him an advantage over others.

9. Describe any learning disability that may have an adverse effect on the pupil.

----

10. Describe manifestations of exceptional creative ability.

----

11. Describe any important aspect of the pupil's physical condition or state of health that may have an adverse effect on him.

----

12. The teacher's rating of the pupil: After careful consideration of all the particulars contained in this document, as well as those contained in ADDENDA B, C, D and E, the pupil is

* RATED/NOT RATED AS POSSIBLY GIFTED.

Category of giftedness:

Reasons for rating and the category of giftedness concerned:

----

13. ________________________________ ___________________

Signature of teacher Date

SOURCE

Adapted from Clark (1979: 428-435).

---

* Delete whichever does not apply.

ADDENDUM I

CHECKLIST 3: STRUCTURED OBSERVATION BY PEER GROUP: NOMINATION OF POSSIBLY GIFTED PUPILS BY MEANS OF A CHECKLIST

Answer the following questions as carefully and as honestly as possible:

1. If you had to form a group to help you carry out an extremely difficult task or project, which of your classmates would you choose?

(a)...................(b)...................(c)...................

(d)...................(e)...................(f)...................

2. In your opinion, which of your classmates are the cleverest?

(a).................................(b)...........................

3. In your opinion, which of your classmates are quickest at understanding schoolwork?

(a).................................(b)...........................

4. Which of your classmates would you choose to help you with a Mathematics or a Science problem?

(a).................................(b)...........................

5. Which of your classmates hardly ever have problems with Mathematics or Science?

(a).................................(b)...........................

6. Which of your classmates learn concepts more quickly than most of the others in the class, are able to remember the details of a particular task and can explain these to you so that you can understand?

(a).................................(b)...........................

7. Which of your classmates have a variety of new, original ideas? In the classroom they come up with the most unusual ideas, with the result that you are deeply impressed by the unusual way in which their minds work. They can aptly sum up the different views of several pupils.

(a).................................(b)...........................

8. Which of your classmates usually take the lead when tasks and assignments have to be carried out?

(a).................................(b)...........................

9. Say a group of you were to be faced with a particularly difficult problem, who would you vote for to act as leader of the group?

(a)................................(b)...........................

10. Which of your classmates display a good sense of fairness? In the classroom such pupils are looked up to when it comes to settling differences between pupils and they therefore help to teach others what the difference between right and wrong is. Consequently they are respected by others.

(a)................................(b)...........................

11. Which of your classmates are born leaders? These pupils know how to organise matters in order to achieve something. They often take charge of situations. Other pupils usually seek their guidance when anything has to be tackled.

(a)................................(b)...........................

12. In your opinion, which of your classmates write the best essays?

(a)................................(b)...........................

13. In your opinion, which of your classmates can express a matter or a point of view best or make the best speech?

(a)................................(b)...........................

14. In your opinion, which of your classmates have the best aptitude for music, singing, ballet, painting and sculpture?

(a)................................(b)...........................

15. In your opinion, which of your classmates outshine everyone else at sport?

(a)................................(b)...........................

16. Which of your classmates have the best sense of humour?

(a)................................(b)...........................

SOURCE

Adapted from Renzulli, Reis and Smith (1981: 233-234) and A.S. Olivier (1983).

ADDENDUM J

CHECKLIST 4: STRUCTURED OBSERVATION BY TEACHING STAFF: IDENTIFICATION OF POSSIBLY GIFTED PREPRIMARY PUPILS BY MEANS OF A CHECKLIST

Pupil: ______________________ Date of birth: ____________

School: ______________________ Date: ____________________

Name of parent: ____

Address: ____

Birth order: ______________________

Attendance at preprimary school:

Six months ______________________

One year ______________________

Two years ______________________

More than two years ________________

		YES	NO
1.	Keenly interested in his environment, objects, topical issues, is inquisitive and keen to find out about things.	.....	.....
2.	Has a very good memory, for example for stories, detail, figures.	.....	.....
3.	Learns easily and quickly.	.....	.....
4.	Tries to find answers and solutions to problems on his own.	.....	.....
5.	Develops more quickly and reaches certain levels of development sooner than other members of his peer group.	.....	.....
6.	Tends to take over leadership of his peer group.	.....	.....
7.	Usually occupies himself with one or more of his interests.	.....	.....
8.	Is an intense and keen observer. He observes more in, for example stories and films than other members of his peer group.	.....	.....
9.	Is original and puts his own thoughts and ideas into practice.	.....	.....

		YES	NO
10.	Is sensitive to aesthetic things.	.....	.....
11.	Is adventurous and speculative.	.....	.....
12.	Shows exceptional skill/interest in all sorts of art forms such as painting, drawing, modelling/handicrafts, music and drama.	.....	.....
13.	Has exceptional linguistic ability and oral expressive ability.	.....	.....
14.	Already recognises some written words, or is even able to read.	.....	.....
15.	Has a very long span of attention/good powers of concentration.	.....	.....
16.	Understands numbers very well.	.....	.....
17.	Understands similarities and differences between things and draws comparisons.	.....	.....
18.	Has the special ability to plan and organise activities.	.....	.....
19.	Asks difficult questions, for example about death, justice, eternity and the values of life.	.....	.....
20.	Is alert, observant and reacts quickly.	.....	.....
21.	Displays exceptional mechanical interests and skills.	.....	.....
22.	Displays exceptional muscular co-ordination and physical skill, for example in dancing, ball games, running and swimming.	.....	.....
23.	Is a dreamer who comes up with surprising ideas, solutions, thoughts and skills.	.....	.....
24.	Is a perfectionist and is critical.	.....	.....
25.	Converses intelligently with older children and adults.	.....	.....

ASSESSMENT

1. Multiply the total number of YES answers by 4.
2. Compare the calculated total with the following scale:

80 + Almost certainly a gifted pupil: Should be assessed further.

70-80 Giftedness is a strong possibility: Should be assessed further.

60-70 Giftedness is a reasonable possibility: Should be assessed further.

50-60 Giftedness is a possibility: Should be watched.

-50 Slight possibility of giftedness.

3. Specific giftedness

(i) Language: 1, 2, 3, 5, 8, 13, 14, 19, 20, 25.
(ii) Mathematics: 3, 5, 7, 15, 16, 17, 21, 24.
(iii) Art: 10, 12.
(iv) Mechanical: 7, 9, 21.
(v) Physical: 18, 21, 22.
(vi) Creative: 4, 5, 8, 9, 11, 12, 18, 20, 23, 25.

TEACHING STAFF'S RATING OF PUPIL

After careful consideration the pupil is* RATED/NOT RATED AS POSSIBLY GIFTED.

Teacher's signature: ______________________ Date: ________

SOURCE

CED (1982: 37-39)

---

* Delete whichever does not apply.

ADDENDUM K

CHECKLIST 5: STRUCTURED OBSERVATION BY PARENTS: IDENTIFICATION OF POSSIBLY GIFTED PREPRIMARY PUPILS BY MEANS OF A CHECKLIST

Pupil: ______________________________ Date of birth: __________

School: ______________________________ Date: ____________________

Name of parent: ____

Address: ____

Birth order: ____________________________

Attendance at preprimary school:

Six months ____________________ One year ____________________

Two years. ____________________ More than two years __________

		YES	NO
1.	Asks many questions about his environment, objects, topical issues; is therefore inquisitive and eager to know about things.	.....	.....
2.	Remembers easily and well.	.....	.....
3.	Learns easily and quickly.	.....	.....
4.	From a very young age he wants to do things for himself, for example dressing and eating.	.....	.....
5.	Is more interested in advanced and "grown-up" things than members of his peer group.	.....	.....
6.	Is inclined to dominate others, especially playmates.	.....	.....
7.	Usually wants to know exactly how things work; shows interest.	.....	.....
8.	Likes to fantasise with "What if?" and "Say this or that happens" games.	.....	.....
9.	Displays a great deal of originality as regards games, toys, ideas and planning.	.....	.....
10.	Notices beautiful things: nature, music, colour.	.....	.....
11.	Is adventurous and daring.	.....	.....
12.	Is artistic, for example in drawing, painting, modelling, music, drama or ballet.	.....	.....

		YES	NO
13.	Has exceptional linguistic ability and vocabulary.	.....	.....
14.	Has taught himself to read words and sentences.	.....	.....
15.	Is able to concentrate long and well.	.....	.....
16.	Can count well and can even do simple addition and subtraction.	.....	.....
17.	Is able to notice similarities and differences between things. Can match or group similar toys, objects, shapes.	.....	.....
18.	Can act independently and take care of himself. Is, for example, independent as regards toilet habits, washing and dressing, socialising and obtaining information.	.....	.....
19.	Asks difficult questions, for example about death, justice, eternity and values in life.	.....	.....
20.	Is alert, observant and can think quickly, for example is always ready with a pithy and apt reply.	.....	.....
21.	Is very handy or skilful with simple tools such as cutlery and construction toys.	.....	.....
22.	Is agile and has good co-ordination, for example in dancing, ball games, running and swimming.	.....	.....
23.	Is a dreamer who often surprises one with original plans, suggestions, ideas, solutions and witticisms.	.....	.....
24.	Likes things to be done correctly.	.....	.....
25.	Readily and entertainingly converses with older children and adults.	.....	.....

ASSESSMENT

1. Multiply the total number of YES answers by 4.
2. Compare the calculated total with the following scale:

80+	Almost certainly a gifted pupil: Should be assessed further.
70-80	Giftedness is a strong possibility: Should be assessed further.
60-70	Giftedness is a reasonable possibility: Should be assessed further.
50-60	Giftedness is a possibility: Should be watched.
50-	Slight possibility of giftedness.

3. Specific giftedness

(i) Language: 1, 2, 3, 5, 6, 8, 13, 14, 19, 20, 25.
(ii) Mathematics: 3, 5, 7, 15, 16, 17, 21, 24.
(iii) Art: 10, 12.
(iv) Mechanical: 7, 9, 21.
(v) Physical: 18, 21, 22.
(vi) Creative: 4, 5, 6, 8, 9, 11, 12,18, 20, 23, 25.

PARENT'S RATING OF THE PUPIL

After careful consideration the pupil is * RATED/NOT RATED AS POSSIBLY GIFTED.

Parent's signature: ______________________________ Date: __________

SOURCE

Gerber (1983)

---

* Delete whichever does not apply.

ADDENDUM L

CHECKLIST 6: CHECKLIST FOR IDENTIFICATION OF GIFTED PUPILS WITH EXCEPTIONAL CREATIVE ABILITIES

Name of pupil:

Teacher:

Date of birth:

Subjects taught to the pupil:

Standard:

Date:

Make a cross in the column that best describes the pupil. Gifted pupils with exceptional creative abilities are not expected to display all the characteristics listed below. Pupils with strong positive weightings for most items will however, in all probability have exceptional creative abilities.

	Low 1	Average 2	High 3
The pupil has the ability to see problems, defects, needs, peculiarities and the unusual.			
He shows particular sensitivity to problems and can recognise, circumscribe, formulate and suggest solutions.			
He can solve problems down to the last detail, thus displaying a more precise, profound perspective.			
He shows particular sensitivity about the world he lives in. The reality of life interests him and experiences prompt him to be inquisitive and to express wonderment.			

	Low 1	Average 2	High 3
He displays a flexibility of thought which makes adaptation to new ideas and circumstances possible and enables him to see a variety of solutions to the same problem.			
He displays flexibility and adaptability of thought, which enables him to deviate from the beaten track with ease. He does not fear the consequences of doing so.			
He experiments with familiar objects and situations to determine how to approach them.			
The way he does things often differs from the ordinary, everyday approach.			
He is not daunted by novelty and responds positively to new, strange, incongruous or mysterious elements in the environment by investigating and manipulating them.			
He has the ability to come up with a variety of ideas on a particular subject, is imaginative and resourceful and able to improvise and fantasise.			
At times he seems to be daydreaming, but in actual fact he is engaged in creative thought.			
He firmly believes in his own ideas, even if others find them unacceptable.			
He can occupy himself with simple things in an imginative way.			

	Low 1	Average 2	High 3
He has the ability to develop ideas and to integrate the main idea and subsidiary ideas into a whole.			
In his approach to a problem he can deviate from the conventional approaches.			
He usually displays a high intellectual capacity.			
He has the ability to see, understand, interpret and account for the interaction and interrelationships between the whole and the parts of what is observed in reality.			
He has the ability to analyse, order and synthesise data or observed information so that it forms a whole.			
He is willing to become involved in complicated issues.			
He displays a large measure of intellectual playfulness and he fantasises and manipulates ideas.			
He criticises constructively and does not take authoritarian pronouncements for granted.			
He is able to apply the knowledge he acquires.			
In observing the world around him he uses all his senses.			

	Low 1	Average 2	High 3
He can understand the things he observes and becomes intuitively aware of their meaning and implications.			
He can keep himself occupied without being stimulated, shows a high degree of untiring industry, is dedicated and can immerse himself in his work for a long time without showing signs of fatigue.			
He often goes beyond the confines of his assignment and does more than is expected of him.			
He is more inclined to be intrinsically motivated to work than extrinsically motivated.			
He displays a high degree of curiosity in examining or investigating objects, ideas, situations and events.			
He displays sensitivity to beauty and experiences the aesthetic with feeling.			
He has a realistic, positive self-image, knows what he is capable of and what he wishes to achieve.			
He shows emotional sensitivity, is aware of his own impulsiveness and knows how to cope with it.			
Depending on the situation, he is capable of conformity or non-conformity.			

	Low 1	Average 2	High 3
He displays independence of thought and behaviour, is individualistic and at times prefers to work on his own.			
He prefers learning through experimentation and manipulation to learning through authoritarian methods of teaching; he seeks answers to questions in his own characteristic way.			
He is critical of himself, evaluates himself and is never altogether satisfied with what he has achieved.			
He has a great deal of self-confidence and has the courage of his convictions to question the commonplace and what is generally accepted.			
He has the courage to be destructive in order to create something better.			
He has the courage to be receptive to new experiences from within and from without.			
He has the courage to try to achieve the apparently impossible and to run great risks. He therefore displays a sense of positive daring.			
He believes in himself and rejects criticism if he considers it to be unfair.			
He has the ability to express his views candidly.			
He has a healthy sense of humour and can see the humorous side of a situation where others would fail to do so.			

	Low 1	Average 2	High 3
He shows the need to get to know more about himself and about his environment. Because of this, he is receptive to new experiences.			

Describe any manifestation of behaviour on the part of the pupil that may also point to the presence of exceptional creative ability.

Describe any manifestations of creative ability.

Describe any impediment that may be present in the pupil and that may militate against the manifestation of creative ability.

What is the main reason why you regard this pupil as exceptionally creative?

SOURCES

Tongue and Sperling (1976: 27-28), the guide compiled by Human Individual Potentialities (1977: 31), Schaefer (Renzulli and Stoddard 1980: 53), Haasbroek and Jooste (1981: 40-41), Torrance (Gowan, Khatena and Torrance 1981: 168-169) and Neethling (1983: 34, 37).

ADDENDUM M

BIOGRAPHICAL QUESTIONNAIRE

1. This questionnaire should be completed for each intensively identified gifted pupil during an interview with, preferably, both parents by a member of the psychological/educational auxiliary service.

2. The completed questionnaire should be placed on the file of the pupil concerned and should be updated from time to time. The file should be kept in a safe place and should not be accessible to everyone.

3. THE INFORMATION CONTAINED IN THIS QUESTIONNAIRE IS HIGHLY CONFIDENTIAL AND IS FOR THE EYES OF THE MEMBERS OF THE PSYCHOLOGICAL/EDUCATIONAL AUXILIARY SERVICE ONLY.

A.

1. Pupil's surname and first name ____________________ 2. Preferred name ____________________

3. Date of birth ____________ Age ____________

4. Date of interview with parents ____________________

5. Name of school ____________________

6. Name of person who conducted the interview ____________

7. Standard of pupil __________ Class teacher/tutor ________

8. Telephone number __________

9. Pupil's residential address ____________________

____

B.

1. Father: Initials __________ Age ____________

Occupation ____________________

Educational background ____________________

2. Mother: Initials __________ Age ____________

Occupation ____________________

Educational background ____________________

3. Other children in the family (including stepbrothers and stepsisters)

Name	Age	School	Standard

4. Birth order of pupil in question ----------------------------------

5. Description of family unit (for example own parents, stepparents, mother/father deceased, other adults in the home)

----

6. Pupil lives with: --

Father and mother ----------------- Father ---------- Mother -------

Other ---------------------------- Specify ----------------------

----

7. Description of any circumstances in the home that may have a negative effect on the pupil's scholastic performance

----

----

8. Home language

State reason if the home language is not the same as the medium of instruction at school.

9. Parents' educational and occupational aspirations for the pupil in question

Father

Mother

C.

1. Did the mother have any health problems during pregnancy?

If so, what were those problems?

2. Was it a difficult birth?

If so, give reasons.

3. Did the pupil have any particular feeding problems?

If so, what problems?

4. Describe any speech problem the pupil may have.

----

5. Describe any visual problem the pupil may have.

----

6. Describe any hearing problem the pupil may have.

----

7. Does the pupil experience, or has he experienced, any of the following health problems?

	YES	NO		YES	NO
Allergies	----	----	Rheumatic fever	----	----
Diabetes	----	----	Tuberculosis	----	----
Epilepsy	----	----	Other serious disorders/illnesses	----	----
Heart disorders	----	----			
Serious injuries	----	----			

Specify --

D.

1. Indicate the age (years and months) at which the pupil began to do the following:

To speak --

To use sentences --

To sit --

To crawl --

To walk ---

To teethe --

To become toilet trained --

To ride a tricycle --

To learn to read --

To learn to ride a bicycle --

E.

1. Describe any early indications of giftedness (for example speech, physical development, specific skills, interests).

F.

1. Hobbies:

Father --

Mother --

2. Activities in which the family takes part:

Activities	To a limited extent	Average	To a great extent
Excursions	----------	----------	----------
Attendance at concerts, performances, etc.	----------	----------	----------
Museum visits	----------	----------	----------
Visits to art galleries	----------	----------	----------
Visits to the cinema	----------	----------	----------
Visits to friends	----------	----------	----------
Attending lectures	----------	----------	----------
Membership of societies			
Father	----------	----------	----------
Mother	----------	----------	----------
Pupil	----------	----------	----------

Activities	To a limited extent	Average	To a great extent
Organised sport			
Father	----------	----------	-----------
Mother	----------	---------	-----------
Pupil	----------	---------	-----------
Other activities	----------	---------	-----------

3. Sport in which the pupil takes part ------------------------------

Achievements --

----

4. Special instruction/coaching out of school

----

5. Particular achievements in this regard

G.

1. What does the pupil do in his leisure time?

----

2. What activities does the pupil prefer when alone?

----

3. To what clubs, societies, organisations (art and outside of school) does the pupil belong?

In what capacity (for example member, leader, chairman, captain)?

4. The pupil's hobbies

5. How does the pupil usually spend his time?

Activity	To a limited extent	Average	To a great extent
Watches television			
Reads			
Does creative work			
Writes			
Draws and paints			
Does jigsaw puzzles			
Solves mathematical problems			
Music:			
Listens			
Plays			
Sport			
Other: ( )			

6. The pupil's choice of friends

	YES	NO
Of the same sex		
Of the opposite sex		

	YES	NO
Of both sexes	-----	-----
Older pupils	-----	-----
Younger pupils	-----	-----
Of the same age	-----	-----
Adults	-----	-----

7. How does the pupil get on with his friends?

----

8. Describe the pupil's reading habits (for example the kind of reading matter, how much is read).

----

9. Describe the availability of suitable reading matter in the home.

----

10. What responsibilities are assigned to the pupil at home?

----

11. How much pocket money does the pupil get and how does he spend it?

----

12. Describe the relationship between the pupil and

father

mother

other members of the family

13. Describe the pupil as regards:

Independence

Acceptance of authority

Obedience

Responsibility

Outlook on life

H.

1. Discuss the pupil's attitude to the school and teachers (for example what he likes or dislikes, relationship with teachers, criticism expressed)

2. To what extent is the pupil's attitude supported by the parents?

3. What, in the parents' view, are the pupil's educational needs?

----

4. To what extent does the present education provision not meet the pupil's needs?

----

5. What are the pupil's occupational and educational aspirations?

----

6. In the parent's opinion, what are the pupil's exceptional or special characteristics?

----

7. Describe any of the pupil's exceptional achievements, past or present.

SOURCES

Compiled and adapted from Rice (1970: 203-208), Martinson (1978: 78-81), Van Niekerk (1978: 61-66), Larsson (1981: 65-66), Painter (1981: 201-204), Renzulli, Reis and Smith (1981: 198) and A.S. Olivier (1983).

ADDENDUM N

PERSONALITY PROFILE OF THE GIFTED PUPIL

1. The information contained in this addendum is a synopsis of all the available information on the pupil and should be seen in the context of the other addenda.

2. The addendum should first be filled in by a member of the psychological/educational auxiliary service in the course of the identification procedure, then completed after intensive identification and finally updated from time to time.

3. THE INFORMATION CONTAINED IN THIS ADDENDUM IS HIGHLY CONFIDENTIAL AND FOR THE EYES OF MEMBERS OF THE PSYCHOLOGICAL/EDUCATIONAL AUXILIARY SERVICE ONLY.

4. The addendum should be placed on the file of each gifted pupil. The file should then be kept in safe keeping where it is not accessible to everybody.

5. Although the part of the addendum that follows applies specifically to white pupils in secondary schools, it can, with minor adjustments, be used for all age groups and all population groups in the RSA.

A. IDENTIFICATION PARTICULARS

1. Pupil's surname and first names ______________________________

2. Date of birth ______________________________ Age __________

3. Residential address ______________________________

____

4. Telephone number __________________

5. Resident in school hostel: YES/NO

6. Standard ______________________________ Course ______________

7. Number of schools attended ______________________________

8. Name of person completing addendum ______________________________

Capacity ______________________________

B. HOME BACKGROUND

1. Father: Initials ______________________________ Age ______________

Occupation ______________________________

Educational background ____________________

2. Mother: Initials ____________________ Age __________

Educational background ____________________

3. Other children in the family (including stepbrothers and stepsisters)

Name	Age	School	Standard

4. Birth order of pupil in question ____________________

5. Description of family unit (for example pupil's own parents, step-parents, mother/father deceased, other adults in the home).

____

____

____

6. Pupil lives with: ____________________

Father and mother ____________________ Father _______ Mother _______

Other ____________________ Specify ____________________

____

7. Home language ____________________

If the home language is not the same as the medium of instruction at school, state the reasons for this and the possible effect on the pupil.

----

8. Synoptic report on home background (for example how favourable home background is for the development of giftedness; intellectual stimulation in the home; interest in scholastic performance; socioeconomic circumstances; possibilities for studying at home; parents' attitude to the school and teachers; parents' attitude to the pupil; cultural level of the family).

C. PHYSICAL FEATURES

1. Describe any physical features or any factors relating to the pupil's state of health that could impair his participation in special education provision for gifted pupils.

2. Describe any conspicuous physical feature of the pupil.

3. Any handicap as regards:

Speech	YES/NO
Hearing	YES/NO
Eyesight	YES/NO
Co-ordination	YES/NO
Other	YES/NO

Specify

D. SCHOLASTIC PERFORMANCE

1. Was the pupil an early beginner at school? YES/NO.
If YES, did early admission to school harm the pupil, and if so, in what respects?

2. Junior primary school phase

	Grade 1/Sub A	Grade 2/Sub B	St 1
Pupil's average			
Average of standard			

Tendencies with regard to scholastic performance (for example possible underachievement, exceptional achievement in all subjects, in some subjects, etc):

3. Senior primary school phase

	Std 2	Std 3	Std 4
Pupil's average			
Average of standard			

Tendencies with regard to scholastic performance (for example possible underachievement, exceptional achievement in all subjects, in some subjects, etc.):

4. Junior secondary school phase

Subjects	Std 5	Std 6	Std 7
English	-----	-----	-----
Afrikaans	-----	-----	-----
Third language	-----	-----	-----
Mathematics	-----	-----	-----
History	-----	-----	-----
Geography	-----	-----	-----
( )	-----	-----	-----
	-----	-----	-----
	-----	-----	-----
	-----	-----	-----
	-----	-----	-----
	-----	-----	-----
Pupil's average	-----	-----	-----
Average of standard	-----	-----	-----
	-----	-----	-----

Tendencies with regard to scholastic performance:

....

....

....

5. Senior secondary school phase

Subjects	Std 8	Std 9	Std 10
English	-----	-----	-----
Afrikaans	-----	-----	-----
( )	-----	-----	-----
	-----	-----	-----
	-----	-----	-----

Subjects	Std 8	Std 9	Std 10
Pupil's average	-----	-----	-----
Average of standard	-----	-----	-----

Tendencies with regard to scholastic performance:

----

6. Summing up as regards scholastic performance:

----

7. Special instruction received by pupil outside the school context:

E. EXTRAMURAL ACTIVITIES

1. Types of sport in which pupil takes part:

Measure of success achieved:

----

2. Other activities participated in by pupil:

Measure of success achieved:

....

....

F. PSYCHOMETRIC INFORMATION

Group intelligence tests Results

Date Name of test Non-verbal Verbal Total

....

....

....

Remarks:

....

....

2. Individual intelligence tests Results

Date Name of test Non-verbal Verbal Total

....

....

Remarks:

....

....

Tendencies with regard to qualitative analysis:

....

....

....

....

....

....

3. Aptitude test battery

		Stanine			Stanine
JAT:	Classification	----	SAT:	Verbal comprehension	-----
	Reasoning	----		Calculations	-----
	Numeracy	----		Word building	-----
	Synonyms	----		Comparison	-----
	Comparison	----		Pattern completion	-----
	Spatial 2-D	----		Figure series	-----
	Spatial 3-D	----		Spatial 2-D	-----
	Memory (paragraph)	----		Spatial 3-D	-----
	Memory (words and symbols	----		Memory (paragraph)	-----
				Memory (words and symbols)	-----
	Mechanical insight	----		Co-ordination	-----
				Writing speed	-----
	Date administered	----		Date administered	-----

Remarks on aptitude:

----

4. Scholastic proficiency battery

		Stanine			Stanine
JSBB:	First language	----	SBB:	Social sciences	-----
				Commercial sciences	-----
	Natural sciences	----		Natural sciences	-----
				Arithmetic	-----
	Geography	----		Languages	-----
	History	----			

	Stanine		Stanine
Second language	-----		
Date administered	-----	Date administered	-----

Remarks on scholastic proficiency:

----

5. **Reading tests** (if administered)

Date administered ---------------- Name of medium --------------

Result --

----

6. **Interest questionnaire**

	Stanine		Stanine
19 VBV: Visual arts	-----	Practical - Male	-----
Performing arts	-----	Practical - Female	-----
Language	-----	Numeracy	-----
History	-----	Business	-----
Service	-----	Clerical work	-----
Welfare work	-----	Travelling	-----
ENTERTAINMENT	-----	Nature	-----
Public appearance	-----	Sport	-----
Law	-----	Work - Hobby	-----
Creative thinking	-----	Active - Passive	-----
Science	-----		

Date administered ---

Remarks on interests (particularly against the background of scholastic performance, intellectual capacity and aptitude):

----

7. **Creativity tests**

Date administered

Remarks on creative ability:

----

8. **Personality questionnaires**

		Stanine	
HSPC:	Reticent	-------	Cordial
	Less intelligent	-------	More intelligent
	Influenced by feelings	-------	Emotionally stable
	Phlegmatic	-------	Excitable
	Submissive	-------	Dominant
	Level-headed	-------	Enthusiastic
	Opportunistic	-------	Conscientious
	Shy	-------	Daring
	Unyielding	-------	Tender-hearted
	Exuberant	-------	Cautiously individualistic
	Self-assured	-------	Fearful
	Dependent on social group	-------	Self-sufficient
	Uncontrolled	-------	Controlled
	Relaxed	-------	Tense

Date administered

Remarks on personality traits:

----

9. Projection media (if administered)

Date administered ------------- **Name of medium** ---------------------

Remarks on the results:

----

10. Relations questionnaire (if administered)

		Stanine		Stanine
PHFS:	Self-confidence	-------	Personal freedom	-------
	Sense of own worth	-------	Sociality-G	-------
	Self-control	-------	Sociality-S	-------
	Nervousness	-------	Moral strength	-------
	Health	-------	Formal relationships	-------
	Family influences	-------	Desirability scale	-------

Date administered ------------------------------

Comments on interpersonal relationships:

----

11. Study habits and attitudes

		Stanine		Stanine
OSGH:	Avoidance of procrastination	-------	Acceptance of education	-------
	Working methods	-------	Study attitude	-------
	Study habits	-------	Study orientation	-------
	Teacher approval	-------		

Date administered ---------------------

Comments on study habits and attitudes:

----

12. Action media (if administered)

Date administered ---------------- Name of medium --------------

Result --

----

13. Observation

Any relevant characteristics of the pupil that came to light through observation:

----

14. Other relevant media

----

15. Synoptic picture

G. RATING

1. By whom was the pupil rated as possibly gifted?

----

2. On what grounds was the pupil rated as such? (for example personality traits, outstanding scholastic performance, etc.)

----

3. For which particular category of giftedness was the pupil rated?

----

4. For which particular category of giftedness was the pupil intensively identified?

----

5. Which outstanding characteristics of the pupil make him a particularly suitable candidate for special education for gifted pupils?

----

6. Which characteristics (if any) of the pupil may spoil his chances of success in special education for gifted pupils?

H. EDUCATION PROVISION

1. What is the nature of the special education provision made for the pupil?

____

____

2. For what reasons is this special kind of education provision being made?

____

____

3. Remarks on the pupil's progress in special education for gifted pupils:

____

____

____

Date ____________________ Teacher ______________________________

____

____

____

Date ____________________ Teacher ______________________________

____

____

____

Date ____________________ Teacher ______________________________

BIBLIOGRAPHY

CHAPTER 1: SURVEY OF EDUCATIONAL PLANNING FOR GIFTED PUPILS IN THE RSA *

AMERICA (United States). Department of Health, Education and Welfare. Report to the Congress of the United States by the US Commissioner of Education : *Education of the gifted and talented*. Washington : Government Printing Office, 1972.

CALIFORNIA STATE DEPARTMENT OF EDUCATION. Division of Gifted and Talented Education. *Guidelines for implementing education code sections 52200 - 55214*. California, Sacramento, 1980. (Unpublished information sheet)

GOUWS, M. Die omskrywing, definiëring, en kategorisering van begaafde kinders. *Suid-Afrikaanse Tydskrif vir Opvoedkunde* 3 (3), 1983: 121-130.

HAASBROEK, J.B., JOOSTE, J.H. *Die identifisering van hoogbegaafde leerlinge met verwysing na onderwysprogramme in die opleiding van onderwysers*. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1981.

PAINTER, Frieda. *Who are the gifted? Definitions and identification*. Stevenage : Pullen, c1980.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die onderwys. Verslag van die Hoofkomitee : *Onderwysvoorsiening in die RSA*. Pretoria, 1981.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. *Verslag van die komitee vir gedifferensieerde onderwys en voorligting insake 'n nasionale onderwysstelsel op primêre en sekondêre skoolvlak met verwysing na skoolvoorligting as 'n geïntegreerde diens van die onderwysstelsel vir die Republiek van Suid-Afrika en vir Suidwes-Afrika, deel 1*. Pretoria, 1970.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die onderwys. Verslag van die Werkkomitee : *Onderwys vir kinders met spesiale onderwysbehoeftes*. Pretoria, 1981.

RENZULLI, J.S. What makes giftedness? Re-examining a definition. *Phi Delta Kappen* Nov. 178 : 180-184.

---

* Memoranda received from various departments of education in the USA and Canada were also used in compiling this Chapter

CHAPTER 2: PROVISION OF EDUCATION FOR GIFTED PUPILS BY EDUCATIONAL AUTHORITIES UP TO OCTOBER 1983

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Instituut vir Opvoedkundige Navorsing. Die stand van onderwysvoorsiening vir hoogbegaafde leerlinge in die RSA. Pretoria, 1983. (Werksdokument saamgestel vir die Werkkomitee : Onderwys vir hoogbegaafde leerlinge uit bydraes van verskillende onderwysdepartemente en ander belanghebbende instansies.

CHAPTER 3: IDENTIFICATION OF GIFTED PUPILS

ANDERSON, J.E. The nature of abilities. In : TORRANCE, E.P. Talent and education : present status and future directions. Minneapolis : University of Minnesota Press, c1960, pp. 9-31.

ANGELINO, H. Characteristics of superior and talented youth. In : SHERTZER, B. Working with superior students : theories and practices. Chicago : Science Research Associates, c1960, pp. 90-104.

BARBE, W.B., RENZULLI, J.S. Phychology and education of the gifted. 2nd ed. New York : Irvington Publishers, c1975.

---- ---- Phychology and education of the gifted. 3rd ed. New York : Irvington Publishers, c1981.

BIRCH, J.W. Is any identification procedure necessary? Gifted Child Quarterly 28(4), Fall 1984 : 157-161.

BISH, C.E. The academically talented. In : CROW, L.D., CROW, Alice. Educating the academically able : a book of readings. New York: David McKay, c1963, pp. 26-33.

BONSALL, Marcella R., STEFFLRE, B. The temperament of gifted children. In : GALLAGHER, J.J. Teaching gifted students : a book of readings. Boston : Allyn and Bacon, 1966, pp. 76-80.

BOTHA, Linda. Katalogus van toetse = Catalogue of tests. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

BOTHA, Linda. Katalogus vir individuele intelligensietoetse en persoonlikheidstoetse (1985-1986) = Catalogue for individual intelligence tests and personality tests (1985-1986). Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1985.

BOTHA, Linda. Katalogus vir skolastiese prestasie- en diagnostiese toetse, aanleg- en bekwaamheidstoetse (1984-1985) = Catalogue for scholastic achievement and diagnostic tests, aptitude and proficiency tests (1984-1985). Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1984.

BRACKENBURY, A. Round the clock with gifted musicians. In : GIBSON, Joy, CHENNELLS, Prue. Gifted children : looking to their future. London : Latimer, 1976, pp. 74-87.

437

BRAGGETT, E. The high price of excellence. Education News 18(11), August 1984 : 17-19.

BROTHWICK, B. et al. The gifted and talented students in Canada. Toronto : The Canadian Education Association, 1980.

DU TOIT, L.B.H. Handleiding vir die Jung-persoonlikheidsvraelys (JPV). Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

ELSHOUT, J.J., KOUWENHOVEN, K., TROMP, D. De identificatie van hoogbegaafde jonge mensen. Pedagogische Studiën 60(5), Mei 1983 : 209-219.

ENGELBRECHT, S.W.B. Akademiese prestasie van intellektueel bogemiddelde leerlinge : deel een : die rol van aanleg en nie-intellektuele faktore by die eksamenprestasie van meisies. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1973.

FELDHUSEN, J.F., ASHER, J.W., HOOVER, S.M. Problems in the identification of giftedness, talent, or ability. Gifted Child Quarterly 28(4), Fall 1984 : 149-151.

FOX, Lynn H. Identification and program planning : models and methods. In : KEATING, D.P. Intellectual talent : research and development. Baltimore : Johns Hopkins, c1976, pp. 32-54.

FRASIER, Mary M. Minority gifted children. In : MILLER, B.S.

PRICE, Merle. The gifted child, the family, and the community. New York : Walker, c1981, pp. 54-59.

FRASIER, Mary M. Screening and identification of gifted students. In : JORDAN, June B., GROSSI, J.A. An administrator's handbook on designing program for the gifted and talented. Reston : Eric Clearinghouse, 1980, pp. 48-55.

FREEMAN, O.L. Minnesota's interest in the identification, development, and utilization of talent. In : TORRANCE, E.P. Talent and education : present status and future directions. Minneapolis : University of Minnesota Press, c1960, pp. 3-6.

GALLAGHER, J.J. Teaching gifted students : a book of readings. Boston : Allyn and Bacon, 1966.

GALLAGHER, J.J. Teaching the gifted child. 2nd ed. Boston : Allyn and Bacon, c1975.

GALLAGHER, J.J. What are gifted children like? In : CROW, L.D., CROW, Alice. Educating the academically able : a book of readings. New York : David McKay, c1963, pp. 40-46.

GEARHEART, B.R. Special education for the 80's. St. Louis : Mosby, 1980.

GERBER, A.P. Identifisering van hoogbegaafde preprimêreskoolleerlinge (Riglyne vir identifisering). Werkkomitee: Onderwys vir hoogbegaafde leerlinge. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

GETZELS, J.W., JACKSON, P.W. The study of giftedness : a multidimensional approach. In : US DEPARTMENT OF HEALTH, EDUCATION AND WELFARE. The gifted student. Washington : US Government Printing Office, 1960, pp. 1-18.

GOLD, M.J. Education of the intellectually gifted. Columbus : Merrill, c1965.

GOLBERG, Miriam L. *et al*. A three year experimental program at De Witt Clinton High School to help bright underachievers. In : GALLAGHER : J.J. Teaching gifted students : a book of readings. Boston: Allyn and Bacon, 1966, pp. 239-257.

GOUWS, M. Openbaringswyses van hoogbegaafde leerlinge - 'n psigopedagogiese perspektief. Pretoria: Raad vir Geesteswetenskaplike Navorsing, 1983.

GOWAN, J.C. Background and history of the gifted-child movement. In: STANLEY, J.C., GEORGE, W.C., SOLANO, Cecilia, H. The gifted and the creative : a fifty-year perspective. Baltimore: Johns Hopkins, c1977, pp. 5-27.

GOWAN, J.C. Identification - responsibility of both principal and teacher. In: BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 2nd ed. New York : Irvington Publishers, c1975, pp. 280-281.

GOWAN, J.C. The underachieving gifted child: a problem for everyone. In : CROW, L.D., CROW, Alice. Educating the academically able: a book of readings. New York: David McKay, c1963, pp. 214-220.

GOWAN, J.C., BRUCH, Catherine B. The academically talented student and guidance. Boston: Houghton Mifflin, c1971.

GOWAN, J.C., DEMOS, G.D. The education and guidance of the ablest. Springfield : Thomas, c1964.

GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Educating the ablest : a book of readings on the education of gifted children. S.l. : Peacock Publishers, 1980.

GOWAN, J.C., KHATENA, J., TORRANCE, E.P., Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981.

GOWAN, J.C., TORRANCE, E.P. Educating the ablest: a book of readings on the education of gifted children. Itasca: Peacock Publishers, 1977.

GROTBERG, Edith H. Adjustment problems of the gifted. In : BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 2nd ed. New York: Irvington Publishers, c1975, pp. 208-213.

GUILFORD, J.P. Factors that aid and hinder creativity. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 59-71.

GUILFORD, J.P. Three faces of intellect. In : BARBE, W.B. RENZULLI, J.S. Psychology and education of the gifted. 3rd ed. New York: Irvington Publishers, c1981, pp. 87-102.

HAASBROEK, J.B., JOOSTE, J.H. Die identifisering van hoogbegaafde leerlinge met verwysing na onderwysprogramme in die opleiding van onderwysers. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1981.

HAGEN, Elizabeth. Identification of the gifted. New York : Teachers College, Columbia University, 1980.

HARRINGTON, R.G. Caution : standardized testing may be hazardous to the educational programs of intellectually gifted children. Education 103 (2), Winter 1982 : 112-117.

HEYL, Helen H. Learning characteristics and problems of gifted children. In : CROW, L.D., CROW, Alice. Educating the academically able : a book of readings. New York : David McKay, c1963, pp. 53-57.

HILDRETH, Gertrude H. Introduction to the gifted. New York : McGraw-Hill, c1966.

HOYLE, E., WILKS, J. Gifted children and their education. London : Balding and Mansell, 1975.

HUMAN INDIVIDUAL POTENTIALITIES Unicornucopia : a guidebook for gifted and talented. Tempe : s.n., 1977.

IDENTIFICATION. The importance of identification. In : Yearbook of Special Education. 3rd ed. Chicago : Marquis, 1977-78, pp. 529-533.

IGLEHART, R. Identifying art talent. In : SHERTZER, B. Working with superior students : theories and practices. Chicago : Science Research Associates, c1960, pp. 123-125.

JACOBS, L.J. Die begaafde kind met sosiale en leerprobleme. In : MüLLER, N.J. Die begaafde kind. Pretoria : Universiteit van Suid-Afrika, c1979, pp. 40-50.

JORDAAN, W.J., JORDAAN, J.J., NIEUWOUDT, J.M. Algemene Sielkunde : 'n psigobiologiese benadering : deel II. Johannesburg : McGraw-Hill, c1975.

KAAPLANDSE ONDERWYSDEPARTEMENT. Identifikasie van die hoogbegaafde kind, indiensopleiding van primêreskoolonderwysers. (S.l. : s.n.), 1982.

KARNES, Frances A., COLLINS, Emily, C. Assessment in gifted education. Springfield : Thomas, c1981.

KHATENA, J. *Educational Psychology of the gifted*. New York : Wiley, c1982.

KHATENA, J. The Khatena-Torrance Creative Perception Inventory for identification, diagnosis, facilitation and research. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. *Creativity : its educational implications*. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 171-177.

LANZA, L.G., VASSAR, W.G. Designing and implementing a program for the gifted and talented. In : BARBE, W.B., RENZULLI, J.S. *Psychology and education of the gifted*. 2nd ed. New York : Irvington Publishers, c1975, pp. 316-323.

LARSSON, Yvonne. *Provisions for the education of gifted and talented children in Australia*. Sydney : University of Sydney, 1981.

LOWENSTEIN, L.F. Teachers' effectiveness in identifying gifted children. *Gifted Education International* 1 (1), 1982 : 33-35.

LYON, H.C. Realising our potential. In : GIBSON, Joy, CHENNELS, Prue. *Gifted children : looking to their future*. London : Latimer, 1976, pp. 20-34.

MARTINSON, Ruth A. Issues in the identification of the gifted. In : RENZULLI, J.S., STODDARD, Elizabeth P. *Gifted and talented education in perspective*. Reston : Eric Clearinghouse, 1980, pp. 4-7.

MARTINSON, Ruth A. *The identification of the gifted and talented*. Reston : Council for Exceptional Children, 1978.

MARTINSON, Ruth A., LESSINGER, L.M. Problems in the identification of intellectually gifted pupils. In : GALLAGHER, J.J. *Teaching gifted students : a book of readings*. Boston : Allyn and Bacon, 1966, pp. 25-33.

MICHAEL, W.B. Cognitive and affective components of creativity in mathematics and the physical sciences. In : STANLEY, J.C., GEORGE, W.C., SOLANO, Cecilia H. *The gifted and the creative : a fifty-year perspective*. Baltimore : Johns Hopkins, c1977, pp. 141-172.

MILES, Catherine C. Crucial factors in the life history of talent. In : TORRANCE, E.P. *Talent and education : present status and future directions*. Minneapolis : University of Minnesota Press, c1960, pp. 51-65.

MILGRAM, Roberta M., MILGRAM, N., LANDAU, Erika. *Identification of gifted children in Israel : a theoretical and empirical investigation*. Tel-Aviv : Tel-Aviv University, 1974.

MÖNKS, F.J. Hoogbegaafde kinderen : een benadeelde groep? *Pedagogische Studiën* 60 (5), Mei 1983 : 195-207.

MONTEITH, J.L. de K. Stimulering van die begaafde leerlinge - noodsaaklik of luukse? *Woord en Daad* 24 (266), Okt. 1984 : 2-3.

MORRISON, Evelyn. Underachievement among preadolescent boys considerred in relationship to passive aggression. *Journal of Educational Psychology* 60 (3), 1969 : 168-173.

NEETHLING, J.S. *Onderwys vir begaafde kind : 'n wetenskaplike ondersoek na die onderwys van begaafde leerlinge in die VSA en Brittanje*. (S.l. : s.n.), 1981.

NEETHLING, J.S. *The identification of the gifted and talented*. (S.l. : s.n.), 1983?

NEL, J.F. *Onderwys vir hoogbegaafde onderpresteerders*. Werkkomitee : Onderwys vir begaafde leerlinge. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

NEWLAND, T.E. *The gifted in socio-educational perspective*. Englewood Cliffs : Prentice-Hall, c1976.

NORFLEET, Mary A.W. Personality characteristics of achieving and underachieving high ability senior women. *Personnel and Guidance Journal* 46 (10), Jun. 1968 : 976-980.

OLIVIER, A. Die kreatiewe begaafde kind in gesinsverband. In : MÜLLER, N.J. *Die begaafde kind*. Pretoria : Universiteit van Suid-Afrika, c1979, pp. 67-71.

OLIVIER, A.S. *Identifisering van die hoogbegaafde leerling in die primêre skool*. Werkkomitee : Onderwys vir begaafde leerlinge. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

O'NEILL, G.P., SCOLLAY, Betty M. The education of intellectually gifted children : a challenge for the 1980's and beyond. *Comment on Education* 13 (3), Feb. 1983 : 11-16.

PACK, Gladys. Parents, beware! The evaluation of gifted and talented students. In : MILLER, B.S., PRICE, Merle. *The gifted child, the family, and the community*. New York : Walker, c1981, pp. 37-46.

PAINTER, Frieda. *Who are the gifted? Definitions and identification*. Stevenage : Pullen, c1980.

PAINTER, Frieda. *Gifted children : a research study*. rev. ed. Stevenage : Pullen, 1981.

PARKYN, G.W. The identification and evaluation of gifted children : a new perspective. In : GIBSON, Joy., CHENNELLS, Prue. *Gifted children : looking to their future*. London : Latimer, 1976, pp. 35-56.

PEGNATO, C.V. Identifying mentally gifted in junior high schools. In : GALLAGHER, J.J. *Teaching gifted students : a book of readings*. Boston : Allyn and Bacon, 1966, pp. 34-42.

PEGNATO, C.V., BIRCH, J.W. Locating gifted children in junior high schools : a comparison of methods. In : BARBE, W.B., RENZULLI, J.S. *Psychology and education of the gifted*. 2nd ed. New York : Irvington Publishers, c1975, pp. 248-255.

PERRONE, P.A., KARSHNER, W.W., MALE, R.A. Identification of talented students. In : COLANGELO, N., ZAFFRANN, R.T. *New voices in counselling the gifted*. Dubuque : Kendall/Hunt, c1979, pp. 76-88.

PILCH, Mary M. Minimum criteria for an effective identification program of talented and gifted students. In : MARTINSON, Ruth A. *The identification of the gifted and talented*. Reston : Council for Exceptional Children, 1978, pp. 129-132.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Instituut vir Opvoedkundige Navorsing. *Die stand van onderwysvoorsiening vir hoogbegaafde leerlinge in die RSA*. Pretoria, 1983.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. *Handleiding vir die Akademiese Bekwaamheidsbattery (ABB) = Manual for the Academic Proficiency Battery (APB)*. Pretoria, 1969.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. *Handleiding vir die Junior Aanlegtoetse (JAT) = Manual for the Junior Aptitude Tests (JAT)*. Pretoria, 1975.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. *Handleiding vir die Jr.-Sr. Hoërskoolpersoonlikheidsvraelys (HSPV)*. Pretoria, 1982.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. *Handleiding vir die Junior Skolastiese Bekwaamheidsbattery (JSBB) = Manual for the Junior Scholastic Proficiency (JSPB)*. Pretoria, 1977.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die Onderwys. Verslag van die Werkkomitee : *Onderwys vir kinders met spesiale onderwysbehoeftes*. Pretoria, 1981.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Werkkomitee : Onderwys vir hoogbegaafde leerlinge. *Notule van die tweede vergadering*. Pretoria, Sept. 1982.

RAPH, Jane B., GOLDBERG, Miriam L., PASSOW, A.H. *Bright underachievers*. New York : Teachers College Press, Columbia University, 1969.

REKDAL, C.K. Personality inventories as tests of creative potential and their use as measurements in programs for the gifted. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. *Creativity : its educational implications*. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 188-199.

RENZULLI, J.S. Will the Gifted Child Movement be alive and well in 1990? *Gifted Child Quarterly* 24 (1), Winter 1980 : 3-9.

RENZULLI, J.S., REIS, Sally M., SMITH, Linda H. *The revolving door identification model*. Mansfield Center : Creative Learning Press, c1981.

RENZULLI, J.S., STODDARD, Elizabeth P. *Gifted and talented education in perspective*. Reston : Eric Clearinghouse, 1980.

RICE, J.P. *The gifted : developing total talent*. Springfield : Thomas, c1970.

RIMM, Sylvia. The characteristics approach : identification and beyond. *Gifted Child Quarterly* 29 (4), Fall 1984 : 181-187.

RIMM, Sylvia., DAVIS, G.A., BIEN, Y. Identifying creativity : a characteristics approach, *Gifted Child Quarterly* 26 (4), Fall 1982 : 165-171.

ROEDELL, Wendy C., JACKSON, Nancy E., ROBINSON, H.B. *Gifted young children*. New York : Teachers College, Columbia University, 1980.

ROOS, W.L. *Die intellektueel-superieure leerlinge : 'n agtergrondbeskrywing op standerd ses-vlak*. Pretoria : Raad vir Geesteswetenskaplike Navorsing. 1970.

ROOS, W.L. *Die intellektueel superieure seun wat skolasties swak presteer : 'n vergelykende studie*. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1980.

ROTH, R.M., PURI, P. Direction of aggression and the non-achievement syndrome. *Journal of Counseling Psychology* 14 (3), 1967 : 277-281.

RYAN, Judith, S. Identifying intellectually superior Black children. *The Journal Educational Research* 76 (3), Jan./Feb. 1983 : 153-156.

SCHAFFER, C.E. A psychological study of 10 exceptionally creative adolescent girls. In : RENZULLI, J.S., STODDARD, Elizabeth P. *Gifted and talented education in perspective*. Reston : Eric Clearinghouse, 1980, pp. 44-54.

SCHEEPERS, J.M. Begaafdheid en die identifisering van die begaafde kind. In : MüLLER, N.J. *Die begaafde kind*. Pretoria : Universiteit van Suid-Afrika, c1979, pp. 1-10.

SCHMIDT, L.G. Problems of superior and talented students. In : SHERTZER, B. *Working with superior students : theories and practices*. Chicago : Science Research Associates, c1960, pp. 172-178.

SCHARTZ, Judith I. Early identification of gifted, talented, and creative children. *Kappa Delta pi Record* 20 (1), Fall 1983 : 24-28.

SHAW, M.C., BROWN, D.J. Scholastic underachievement of bright college students. *Personnel and Guidance Journal* 34, Nov. 1957 : 195-199.

SHAW, M.C., McCUEN, J.T. The onset of academic underachievement in bright children. In : GALLAGHER, J.J. *Teaching gifted students : a book of readings*. Boston : Allyn and Bacon, 1966, pp. 258-265.

SHERTZER, B. Identifying superior and talented students. In : SHERTZER, B. Working with superior students : theories and practices. Chicago : Science Research Associates, c1960, pp. 105-114.

SMALTZ, Janet M., MATHISEN, J.D. Who are the gifted? North Dakota. In : CROW, L.D., CROW, Alice. Educating the academically able : a book of readings. New York : David McKay, c1963, pp. 36-39.

SOLANO, Cecilia H. The first D : discovery of talent, or needles in a haystack : identifying the mathematically gifted child. In : COLANGELO, N., ZAFFRANN, R.T. New voices in counselling the gifted. Dubuque : Kendall/Hunt, c1979, pp. 89-106.

SONNEKUS, M.C.H. Aspekte van intelligensie binne die verhouding tussen mens en wêreld. In : NEL, B.F., SONNEKUS, M.C.H., GARBERS, J.G. Grondslae van die psigologie : 'n inleidende analise van die verhouding tussen mens en wêreld. Stellenbosch : Universiteits-uitgewers en -boekhandelaars, 1965, pp. 304-325.

STANLEY, J.C. The second D : description of talent (further study of the intellectually talented youths). In : COLANGELO, N., ZAFFRANN, R.T. New voices in counselling the gifted. Dubuque : Kendall/Hunt, c1979, pp. 107-118.

STERNBERG, R.J. Lies we live by : misapplication of tests in identifying the gifted. Gifted Child Quarterly 26 (4), Fall 1982 : 157-161.

STRANG, Ruth. Helping your gifted child. New York : Dutton, 1960.

SUID-ARIKA (Republiek). Die Wet op die Nasionale Onderwysbeleid, No. 39 van 1967, artikels 2 (1) (a) en (f).

SUMPTION, Merle R., LUECKING, Evelyn M. Education of the gifted. New York : Ronald Press, c1960.

TANNENBAUM, A.J. Gifted children : Psychological and Educational Perspectives. New York : Macmillan, c1983.

TAYLOR, C.W. Who are the exceptionally creative? In : GALLAGHER, J.J. Teaching gifted students : a book of readings. Boston : Allyn and Bacon, 1966, pp. 51-64.

TAYLOR, R.L. Assessment of exceptional students : educational and psychological procedures. Englewood Cliffs : Prentice-Hall, c1984.

TERMAN, L.M. The discovery and encouragement of exceptional talent In : BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 3rd ed. New York : Irvington Publishers, c1981, pp. 5-19.

TERMAN, L.M., ODEN, Melita H. The Terman study of intellectually gifted children. In : DENNIS, W., DENNIS, Margaret W. The intellectually gifted : an overview. New York : Grune and Stratton, c1976, pp. 51-67.

THOMAS, G.I., CRESCIMBENI, J. Guiding the gifted child. New York : Random House, c1966.

THUNBERG, Ursula. The gifted in minority groups. In : MILLER, B. S., PRICE, Merle. The gifted child, the family, and the community. New York : Walker, c1981, pp. 47-53.

TONGUE, Cornelia, SPERLING, C., Gifted and talented : an identification model. Raleigh : Division for Exceptional Children, 1976.

TORRANCE, E.P. Can creativity be increased by practise? In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 99-108.

TORRANCE, E.P. Gifted children in the classroom. New York : MacMillan, c1965.

TORRANCE, E.P. Non-test ways of identifying the creatively gifted. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 165-170.

TORRANCE, E.P. Some guiding principles in evaluating excellence. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 47-54.

TORRANCE, E.P. The role of creativity in identification of the gifted and talented. Gifted Child Quarterly 28 (4), Fall 1984: 153-156.

TORRANCE, E.P Toward the more humane education of gifted children. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 6-18.

TREFFINGER, G.D., RENZULLI, J.S., FELDHUSEN, J.F. Problems in the assessment of creative thinking. In : BARBE, W.B., RENZULLI J.S. Psychology and education of the gifted. 2nd ed. New York : Irvington Publishers, c1975, pp. 240-247.

TRILLINGHAM, C.C., BONSALL, Marcella R. The gifted underachiever. In : CROW, L.D., CROW, Alice. Educating the academically able : a book of readings. New York : David McKay, c1963, pp. 210-214.

VAN DER WALT, J.S. Skoolvoorligting : Beginsels, tegnieke en toepassings. Johannesburg : McGraw-Hill, c1979.

VAN NIEKERK, P.A. Ortopedagogiese diagnostiek. Stellenbosch : Universiteitsuitgewers en -boekhandelaars, 1978.

VAUGHAN, Kirsten M. Denmark. In : GIBSON, Joy, CHENNELS, Prue. Gifted children : looking to their future. London : Latimer, 1976, pp. 299-302.

VENTER, D.P. *Die Junior Suid-Afrikaanse Individuele Skale*. Referaat gelewer tydens die indiensopleidingskursus van die KOD vir remediërende leerkragte (1983 : Kaapstad).

VERNON, P.E., ADAMSON, Georgina, VERNON, Dorothy F. *The psychology and education of gifted children*. London : Methuen, 1977.

WALLACE, Belle. Giftedness : definition and identification. *Gifted Education International* 1 (1), 1982 : 3-5.

WEINER, Ann. Our gifted and talented: what are their needs and what can we do? In : MILLER, B.S., PRICE, Merle. *The gifted child, the family, and the community*. New York : Walker, c1981, pp. 27-31.

WHITMORE, Joanne. Identifying and programming for highly gifted underachievers in the elementary school. In : *Yearbook of Special Education*. 6th ed. Chicago : Marquis, 1980-81, pp. 365-380.

WALLINGS, D. *The creatively gifted : recognizing and developing the creative personality*. Cambridge : Woodhead-Faulkner, 1980.

WOODLIFFE, Helen M. *Teaching gifted learners : a handbook for teachers*. Ontario : Ontario Institute for Studies in Education, c1977.

CHAPTER 4: THE PROBLEM OF GIFTED UNDERACHIEVERS

ABRAHAM, W. Motivating the gifted underachiever. In : CROW, L.D., CROW, Alice. *Educating the academically able : a book of readings*. New York : David McKay, c1963, pp. 221-225.

BRAMMER, L.M., SHOSTROM, E.L. *Therapeutic Psychology : fundamentals of counselling and psychotherapy*. Englewood Cliffs : Prentice-Hall, 1960.

BUTLER, Nava. Israel's first experiment in special classes for gifted children within regular schools. In : GIBSON, Joy, CHENNELS, Prue. *Gifted children : looking to their future*. London : Latimer, 1976, pp. 169-181.

CLARK, Barbara. *Growing up gifted : developing the potential of children at home and at school*. Columbus : Merrill, c1979.

CLARK, Barbara. *Growing up gifted : developing the potential of children at home and at school*. 2nd ed. Columbus : Merrill, c1983.

CONNOR, Marjorie W. Learning characteristics of able non-achievers in audiolingual foreign language classes. *Dissertation Abstracts International* 29 (5-A), 1968 : 1 446-1 447.

CUTTS, Norma E., MOSELEY, N. *Teaching the bright and gifted*. Englewood Cliffs : Prentice-Hall, c1958.

DAVIDS, A. Psychological characteristics of high school male and female potential scientists in comparison with academic underachievers. Psychology in Schools 3 (1), 1966 : 79-87.

DEHAAN, R.F. Accelerated learning programs. New York : Center for Applied Research in Education, 1963.

DEO, P., GUPTA, A.K. A comparison of the criteria for identifying over and underachievers. Indian Education Review 7 (1), Jan. 1972 : 153-167.

DICKENSON, W.A., TRUAX, C.B. Group counseling with college underachievers. Personnel and Guidance Journal 45 (3), Nov. 1966 : 243-247.

DOWDALL, Cynthia B., COLANGELO, N. Underachieving gifted students : review and implication. Gifted Child Quarterly 26 (4), Fall 1982 : 179-183.

DUMINY, P.A. Begaafdheid en die onderwys van begaafde kinders. Amsterdam : Meulenhoff, voorw. 1963.

DU TOIT, J.M. Die preventatiewe aspek ten opsigte van onderpresteerders. Die Suid-Afrikaanse Sielkundige Monografie nr. 20, Junie 1964 : 1-15.

DU TOIT, J.M., VAN DER MERWE, A.B. Sielkunde : 'n algemene inleiding. Kaapstad : HAUM, 1966.

DU TOIT, L.B.H. Die verband tussen enkele nie-intellektuele faktore en die akademiese prestasie van eerstejaarstudente aan universiteite en onderwyskolleges. Humanitas, RSA 3 (4), 1976 : 395-407.

DU TOIT, L.B.H. Die verband tussen studiegewoontes en -houdings en die akademiese prestasie van hoërskoolleerlinge. Humanitas, RSA 2 (3), 1974 : 231-243.

ENGELBRECHT, S.W.B. Akademiese prestasie van intellektueel bogemiddelde leerlinge : deel een : die rol van aanleg en nie-intellektuele faktore by die eksamenprestasie van meisies. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1973.

ENGELBRECHT, S.W.B. Akademiese prestasie van intellektueel bogemiddelde leerlinge : deel vyf : 'n vergelykende ondersoek van faktore wat verband hou met die eksamenprestasie van seuns en meisies. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1975.

FORD, D.H., URBAN, H.B. Systems of psychotherapy : a comparative study. New York : Wiley, 1965.

FRANKS, Beth, DOLAN, L. Affective characteristics of gifted children : educational implications. Gifted Child Quarterly 26 (4), Fall 1982 : 172-177.

GALLAGHER, J.J. Teaching gifted students : a book of readings. Boston : Allyn and Bacon, 1966.

GALLAGHER, J.J. Teaching the gifted child. 2nd ed. Boston : Allyn and Bacon, c1975.

GARBERS, J.G. Die strewinge of motiewe van die mens. In : NEL, B.F., SONNEKUS, M.C.H., GARBERS, J.G. *Grondslae van die Psigologie*. Stellenbosch : Universiteitsuitgewers en -boekhandelaars, 1965, pp. 378-410.

GAUDRY, E., SPIELBERGER, C.D. *Anxiety and educational achievement*. Sydney : Wiley, c1971.

GILMORE, J.V. The factor of attention in underachievement. *Journal of Education* Feb. 1968 : 41-66.

GOLD, M.J. *Education of the intellectually gifted*. Columbus : Merrill, c1965.

GOLDENBERG, Miriam L. *et al*. A three-year experimental program at DeWitt Clinton High School to help bright underachievers.

In : GALLAGHER, J.J. *Teaching gifted students : a book of readings*. Boston : Allyn and Bacon, 1966, pp. 239-257.

GOWAN, J.C. The underachieving gifted child : a problem for everyone. In : CROW, L.D., CROW, Alice. *Educating the academically able : a book of readings*. New York : David McKay, c1963, pp. 214-220.

GOWAN, J.C., BRUCH, Catherine B. *The academically talented student and guidance*. Boston : Houghton Mifflin, c1971.

GOWAN, J.C., DEMOS, G.D. *The education and guidance of the ablest*. Springfield : Charles C. Thomas, c1964.

GRANDLUND, Elnore., KNOWLES, Lois. Child-parent identification and academic underachievement. *Journal of Consulting and Clinical Psychology* 33 (4), 1969 : 495-496.

GROTBERG, Edith H. Adjustment problems of the gifted. In : BARBE, W.B., RENZULLI, J.S. *Psychology and education of the gifted*. 2nd ed. New York : Irvington Publishers, c1975, pp. 208-213.

GURMAN, A.S. The role of the family in underachievement. *Journal of School Psychology* 8 (1), 1970 : 48-53.

HAASBROEK, J.B., JOOSTE, J.H. *Die identifisering van hoogbegaafde leerlinge met verwysing na onderwysprogramme in die opleiding van onderwysers*. Pretoria: Raad vir Geesteswetenskaplike Navorsing, 1981.

HAYES, E.J. Relationships between self-concept of arithmetic ability and arithmetic achievement in a selected group of sixth grade students. *Dissertation Abstracts International* 28 (10-a), 1968 : 3 999.

HAYWOOD, H.C. Motivational orientation of overachieving and underachieving elementary school children. *American Journal of Mental Deficiency* 72 (2), 1968 : 662-667.

HELFENBEIN, L.N. Differences among differentially defined types of underachievers. Dissertation Abstracts International 30 (9-A), 1970 : 3 785-3 786.

HILDRETH, Gertrude H. Introduction to the gifted. New York : McGraw-Hill, c1966.

JACKSON, R.M. In support of the concept of underachievement. Personnel and Guidance Journal 47 (1), Sept. 1968 : 56-62.

JACOBS, L.J. Die begaafde kind met sosiale en leerprobleme. In : MüLLER, N.J. Die begaafde kind. Pretoria : Universiteit van Suid-Afrika, c1979, pp. 40-50.

JACOBS, L.J., VREY, J.D. Selfkonsep, diagnose en terapie: 'n opvoedkundig-sielkundige benadering. Pretoria : Academica, c1982.

JOHNSON, Donna M. Personality differences between low and high achieving boys using the Personality Inventory for Children. Dissertation Abstracts International, July 1971 : 241.

KHATENA, J. Educational Psychology of the gifted. New York : Wiley, c1982.

KISCH, J.M. A comparative study of patterns of underachievement among male college students. Dissertation Abstracts International 28 (8-B), 1968 : 3 461-3 462.

LYON, H.C. Realising our potential. In : GIBSON, Joy, CHENNELLS, Prue. Gifted children : looking to their future. London : Latimer, 1976, pp. 20-34.

MACKINNON, D.W. The nature and nurture of creative talent. In : BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 3rd ed. New York : Irvington Publishers, c1981, pp. 111-127.

MORRISON, Evelyn. Underachievement among preadolescent boys considered in relationship to passive aggression. Journal of Educational Psychology 60 (3), 1969 : 168-173.

NEL, E.M. Die persoonlikheidseienskappe van 'n groep begaafde studente wat onderpresteer. Die Suid-Afrikaanse Sielkundige Monografie nr. 18, Mei 1964 : 1-16.

NEL, J.F. Onderwys vir hoogbegaafde onderpresteerders. Werkkomitee : Onderwys vir begaafde leerlinge. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

NEWLAND, T.E. The gifted in socio-educational perspective. Englewood Cliffs : Prentice-Hall, c1976.

NOEL, L.G. Selected factors related to underachievement of superior students in Illinois colleges. Dissertation Abstracts International 30 (7-A), 1970 : 2 808.

NORFLEET, Mary A.W. Personality characteristics of achieving and underachieving high ability senior women. Personnel and Guidance Journal 46 (10), Jun. 1968 : 976-980.

OAKLAND, J.A. Measurement of personality correlates to academic achievement in high school students. Journal of Counselling Psychology 16 (5), 1969 : 452-457.

OAKLAND, J.A. The performance of high school students on the Edwards Personality Inventory and its relationship to over- and underachievement. Dissertation Abstracts International 28 (9-B), 1968 : 3 882.

OWENS, W.A., JOHNSON, Wilma C. Some measured personality traits of collegiate underachievers. The Journal of Educational Psychology 40 (1), 1949 : 41-46.

PERVIN, L.A. Personality : theory, assessment, and research. 2nd ed. New York : Wiley, c1975.

PETERS, Dorothy M. The self-concept as a factor in over- and underachievement. Dissertation Abstracts International 29 (6-A), 1968 : 1 792-1 793.

RAPH, Jane B., GOLDBERG, Miriam L., PASSOW, A.H. Bright underachievers. New York : Teachers College Press, Columbia University, 1969.

REKDAL, C.K. Personality inventories as tests of creative potential and their use as measurements in programs for the gifted. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 188-189.

RICE, J.P. The gifted : developing total talent. Springfield : Charles C. Thomas, c1970.

BORDERS, C.R. Client-centered therapy. Boston : Houghton Mifflin, 1965.

ROGERS, C.R. On becoming a person : a therapist's view of psychotherapy. London : Constable, 1969.

ROGERS, C.R. The organization of personality. In : SOUTHWELL, E.A., MERBAUM, M. Personality : readings in theory and research. Belmont : Wadsworth, 1965, pp. 204-220.

ROOS, W.L. Die intellektueel superieure seun wat skolasties swak presteer : 'n vergelykende studie. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1980.

ROTH, R.M., MEYERSBURG, H.A. The non-achievement syndrome. Personnel and Guidance Journal 41 (6), Feb. 1963 : 535-540.

ROTH, R.M., PURI, P. Direction of aggression and the non-achievement syndrome. Journal of Counselling Psychology 14 (3), 1967 : 277-281.

RUBIN, Dorothy S. A comparison of the mother and father schemeta of achievers and underachievers : a study of primary grades and achievement in arithmetic. Dissertation Abstracts International 29 (6-A), 1968 : 1 794.

SCHMIDT, L.G. Problems of superior and talented students. In : SHERTZER, B. Working with superior students : theories and practices. Chicago : Science Research Associates, c1960, pp. 172-178.

SHAW, M.C., BROWN, D.J. Scholastic underachievement of bright college students. Personnel and Guidance Journal 34, Nov. 1957 : 195-199.

SHAW, M.C., McCUEN, J.T. The onset of academic underachievement in bright children. In : GALLAGHER, J.J. Teaching gifted students : a book of readings. Boston : Allyn and Bacon, 1966, pp. 258-265.

SHAW, M.C., WHITE, D.L. The relationship between child-parent identification and academic underachievement. Journal of Clinical Psychology XXI (1), January 1965 : 10-13.

SMITH, C.P., WINTERBOTTOM, Miriam T. Personality characteristics of college students on academic probation. Journal of Personality, Sept. 1970 : 379-391.

STENNER, A.J., KATZENMEYER, W.G. Self concept, ability, and achievement in a sample of sixth grade students. Journal of Educational Research 69 (7), Mar. 1976 : 270-273.

SUMPTION, Merle R., LUECKING, Evelyn M. Education of the gifted. New York : Ronald Press, c1960.

TANNENBAUM, A.J. Gifted children : Psychological and educational perspectives. New York : Macmillan, c1983.

TAYLOR, C.A., VAN DER WESTHUIZEN, C.P. Die onderrig van die begaafde kind. Durbanville : Boschendal, 1983.

TEIGLAND, J.J. *et al.* Some concomitants of underachievement at the elementary school level. Personnel and Guidance Journal 44 (9), May 1966 : 950-955.

THELEN, M.H., HARRIS, C.S. Personality of college underachievers who improve with group psychotherapy. Personnel and Guidance Journal 46 (6), Feb. 1968 : 561-566.

THOMAS, G.I., CRESCIMBENI, J. Guiding the gifted child. New York : Random House, c1966.

TORRANCE, E.P. Toward the more humane education of gifted children. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 6-18.

TRILLINGHAM, C.C., BONSALL, Marcella R. The gifted underachiever. In : CROW, L.D., CROW, Alice. Educating the academically able : a book of readings. New York : David McKay, c1963, pp. 210-214.

VAN DER MERWE, A.B. Die akademiese onderpresteerders ad kliniese probleem. Die Suid-Afrikaanse Sielkundige Monografie nr. 21, Junie 1964 : 1-7.

VARGAS, M.J. Changes in self-awareness during client-centered therapy. In : ROGERS, C.R., DYMOND, Rosalind F. Psychotherapy and personality change. Chicago : University of Chicago Press, 1969, pp. 145-166.

WHITMORE, Joanne. Identifying and programming for highly gifted underachievers in the elementary school. In : Yearbook of Special Education. 6th ed. Chicago : Marquis, 1980-81, pp. 365-380.

ZILLI, Marie G. Reasons why the gifted adolescent underachieves and some of the implications of guidance and counselling to this problem. The Gifted Child Quarterly 15 (4), Winter 1971 : 279-292.

CHAPTER 5: SCHOOL GUIDANCE FOR GIFTED PUPILS

BEUKES, J.H., WEIDEMAN, B.P. Skoolvoorligting van die Afdeling Kleurlingonderwys (Departement van Binnelandse Aangeleenthede) Deel 1 : Skoolvoorligting aan primêre skole. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1982.

COETZEE, R.A. Die groepbespreking as oriënteringsgebeure tot selfkennis in die beroepsoriënteringspraktyk. Pretoria : Universiteit van Pretoria, 1978. (M.Ed.-verhandeling)

DE KLERK, Josephine T., NIEUWENHUIS, F.J. Opvoeding tot verantwoordelikheid met betrekking tot geslagsaangeleenthede. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

EDITORIAL: The view from myopia. Gifted Child Quarterly 21 (2), Sum. 1977 : 154-163.

FINE, M.J., PITTS, R. Intervention with underachieving gifted children : rationale and strategies. Gifted Child Quarterly 24 (2), Spring 1980 : 51-55.

GOUWS, M. Die omskrywing, definiëring en kategorisering van begaafde kinders. Referaat gelewer tydens die SAVBO-kongres (1983 : Port Elizabeth). Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

GOWAN, J.C. The use of a developmental stage theory in helping gifted children become creative. Gifted Child Quarterly 24 (1), Winter 1980 : 22-28.

GOWAN, J.C., BRUCH, Catherine B. The academically talented student and guidance. Boston : Houghton Mifflin, c1971.

GOWAN, J.C., DEMOS, G.D. The education and guidance of the ablest. Springfield : Charles C. Thomas, c1964.

GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981.

HILDRETH, Gertrude H. Introduction to the gifted. New York : McGraw-Hill, c1966.

JORDAN, J.E., KEITH, J.P. The counselor's role in working with the gifted. The Gifted Child Quarterly 9, 1965 : 136-140.

JOUBERT, C.J. Algemene skoolvoorligting. Johannesburg : McGraw-Hill, 1982.

KHATENA, J. Educational Psychology of the gifted. New York : Wiley, c1982.

KHATENA, J. The gifted child in the United States and abroad. The Gifted Child Quarterly 21 (3), Fall 1977 : 372-387.

LAYCOCK, F. Gifted children. Glenview : Scott, Foresman, c1979.

MARTINSON, Ruth A. The identification of the gifted and talented. Reston : Council for Exceptional Children, 1978.

NIEUWENHUIS, F.J. Die ontwikkeling van 'n beroepsbeeld by die primêre- en sekondêreskoolkind. Johannesburg : Randse Afrikaanse Universiteit, 1983. (Ongepuliseerde D.Ed.-proefskrif)

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die Onderwys. Verslag van die Hoofkomitee : Onderwysvoorsiening in die RSA. Pretoria, 1981b.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die Onderwys. Verslag van die Werkkomitee : Voorligting. Pretoria, 1981a.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Verslag van die komitee vir gedifferensieerde onderwys en voorligting insake 'n nasionale onderwysstelsel op primêre en sekondêre skoolvlak met verwysing na skoolvoorligting as 'n geïntegreerde diens van die onderwysstelsel vir die Republiek van Suid-Afrika en vir Suidwes-Afrika, Deel 1. Pretoria, 1972.

RENZULLI, J.S. What makes giftedness? Re-examining a definition. Phi Delta Kappen, 60/(3), Nov. 1978 : 180-184.

ROGERS, C.R. On becoming a person : a therapist's view of psychotherapy. London : Constable, 1969.

SPIES, P.G. van Z. Skoolvoorligting : doelstellings en terminologie. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1977.

VAN DER WALT, J.S. Voorligting aan die hoogbegaafde leerling. Werkkomitee : Onderwys vir begaafde leerlinge. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

VAN DER WALT, J.S. Skoolvoorligting : Beginsels, tegnieke en toepassings. Johannesburg : McGraw-Hill, c1979.

ZAFFRANN, R.T., COLANGELO, N. Counseling with gifted and talented students. Gifted Child Quarterly 21 (3), Fall 1977 : 305-321.

CHAPTER 6: FORMING PARENTAL AND TEACHER ATTITUDES TOWARDS GIFTEDNESS, GIFTED PUPILS AND EDUCATION FOR THE GIFTED

BARBE, W.B., FRIERSON, E.C. Teaching the gifted - a new frame of reference. In: BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 3rd ed. New York : Irvington Publishers, c1981, pp. 409-412.

BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. New York : Irvington Publishers, c1975.

BUTLER, Nava. Israel's first experiment in special classes for gifted children within regular schools. In : GIBSON, Joy, CHENNELS, Prue. Gifted children : looking to their future. London : Latimer, 1976, pp. 169-181.

CLARK, Barbara. Growing up gifted : developing the potential of children at home and at school. 2nd ed. Columbus : Merrill, c1983.

CUTTS, Norma E., MOSELEY, N. Teaching the bright and gifted. Englewood Cliffs : Prentice-Hall, c1958.

DIVIDSON, Kim E. Parents - do your children like themselves? In : MILLER, B.S., PRICE, Merle. The gifted child, the family and the community. New York : Walker, c1981, pp. 73-75.

DAVIS, G.A., RIMM, Sylvia. Identification and counselling of the creatively gifted. In : COLANGELO, N., ZAFFRANN, R.T. New voices in counselling the gifted. Dubuque : Kendall/Hunt, c1979, pp. 225-236.

DEHAAN, R.F. Accellerated learning programs. New York : Center for Applied Research in Education, 1963.

DEJAMES, Patricia L. Effective parent/teacher/child relationships. Education 102 (1), Fall 1981 : 34-36.

FINE, M.J. Facilitating parent-child relationships for creativity. In : BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 3rd ed. New York : Irvington Publishers, c1981, pp. 463-474.

GALLAGHER, J.J. Teaching the gifted child. 2nd ed. Boston : Allyn and Bacon, c1975.

GOODALE, R.A. Methods for encouraging creativity in the classroom. In : BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 3rd ed. New York : Irvington Publishers, c1981, pp. 375-385.

GOUWS, L.A. et al. Psigologiewoordeboek. Johannesburg : McGraw-Hill, 1979.

GOWAN, J.C. Dynamics of the underachievement of gifted students. In : FRENCH, J.L. Educating the gifted : a book of readings. New York : Holt and Company, c1959, pp. 395-402.

GOWAN, J.C., DEMOS, G.D. The education and guidance of the ablest. Springfield : Charles C. Thomas, c1964.

GOWAN, J.C., TORRANCE, E.P. Educating the ablest : a book of readings on the education of gifted children. Itasca : Peacock Publishers, 1977.

GREENSTADT, W.M. Parents of gifted children : coping with anxieties. In : MILLER, B.S., PRICE, Merle. The gifted child, the family, and the community. New York : Walker, c1981, pp. 77-82.

GROSSI, J.A. Parents and administrators : working together. In : JORDAN, June B., GROSSI, J.A. An administrator's handbook on designing programs for the gifted and talented. Reston : Eric Clearinghouse, 1980, pp. 89-101.

HAASBROEK, J.B., JOOSTE, J.H. Die identifisering van hoogbegaafde leerlinge met verwysing na onderwysprogramme in die opleiding van onderwysers. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1981.

HILDRETH, Gertrude H. Introduction to the gifted. New York : McGraw-Hill, c1966.

HILDRETH, Gertrude H. The creative child at home. In : MILLER, B. S., PRICE, Merle. The gifted child, the family, and the community. New York : Walker, c1981, pp. 92-99.

HIRST, Barbara. Private time. In : MILLER, B.S., PRICE, Merle. The gifted child, the family, and the community. New York : Walker, c1981, pp. 76.

JACOBS, L.J. Die begaafde kind met sosiale en leerprobleme. In : MüLLER, N.J. Die begaafde kind. Pretoria : Universiteit van Suid-Afrika, c1979, pp. 40-50.

JACOBS, L.J., VREY, J.D. Selfkonsep, diagnose en terapie : 'n opvoedkundig-sielkundige benadering. Pretoria : Academica, c1982.

KARNES, Frances A., KARNES, M.R. Parents and schools : educating gifted and talented children. The Elementary School Journal 82 (3), Jan. 1982 : 236-243.

KAUFMANN, Felice. Recognizing creative behavior. In : MILLER, B.S., PRICE, Merle. The gifted child, the family, and the community. New York : Walker, c1981, pp. 83-91.

KHATENA, J. Some suggestions for parents and educators on handling the creative child. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. Creativity : its educational implications. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 240-246.

KIRSCHENBAUM, R. Who are the gifted and why are they different? *The Education Digest* 45 (3), Nov. 1979 : 34-35.

KNAPP, R. Guidelines for an elementary school gifted program : a case study. In : COLANGELO, N., ZAFFRANN, R.T. *New voices in counseling the gifted*. Dubuque : Kendall/Hunt, c1979, pp. 444-448.

KRITZINGER, M.B.S., LABUSCHAGNE, F.J., PIENAAR, P.de V. *Verklarende Afrikaanse Woordeboek*. Pretoria : Van Schaik, 1971.

KRUGER, J.C. Die begaafde kind in die gesin. In : MüLLER, N.J. *Die begaafde kind*. Pretoria : Universiteit van Suid-Afrika, c1979, pp. 59-64.

LANDMAN, W.A. *Fundamentele Pedagogiek en onderwyspraktyk : metodologie, Fundamentele Pedagogiek en lesstruktuur*. Durban : Butterworth, 1977.

LANDMAN, W.A. Opvoedende leer en leerwyses, fundamenteelpedagogies gesien. In : LANDMAN, W.A., ROOS, S.G., MENTZ, N.J. *Fundamentele Pedagogiek : leerwyses en vakonderrig*. Durban : Butterworth, 1979, pp. 32-82.

LAYCOCK, S.R. Counselling parents of gifted children. In : FRENCH, J.L. *Educating the gifted : a book of readings*. New York : Holt and Company, c1959, pp. 81-88.

LEVINE, Elaine, EVANS, Marilyn J. The behaviorally disordered creative child ; a challenge to our diagnostic and teaching procedures. *Contemporary Education* 55 (1), Fall 1983 : 28-32.

LYON, H.C. Realising our potential. In : GIBSON, Joy, CHENNELS, Prue. *Gifted children : looking to their future*. London : Latimer, 1976, pp. 20-34.

MALAN, J.A. Die begaafde en talentvolle kind in die primêre skool - enkele los gedagtes. *Die Unie* 76 (6), Des. 1979 : 175-177.

NELSON, Joan B., CLELAND, D.L. The role of the teacher of gifted and creative children. In : BARBE, W.B., RENZULLI, J.S. *Psychology and education of the gifted*. 2nd ed. New York : Irvington Publishers, c1975, pp. 439-448.

NEWLAND, T.E. *The gifted in socio-educational perspective*. Englewood Cliffs : Prentice-Hall, c1976.

OLIVIER, A. Die kreatief begaafde kind in gesinsverband. In : MüLLER, N.J. *Die begaafde kind*. Pretoria : Universiteit van Suid-Afrika, c1979, pp. 67-71.

PASQUES, L.J., BOSHOFF, W.J., NEL, J.F. *Kurrikulering vir hoogbegaafde leerlinge*. Werkkomitee : Onderwys vir begaafde leerlinge. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

RICE, J.P. The gifted : developing total talent. Springfield : Charles C. Thomas, c1970.

ROSS, A.O. The gifted child in the family. In : COLANGELO, N., ZAFFRANN, R.T. *New voices in counseling the gifted*. Dubuque : Kendall/Hunt, c1979, pp. 402-407.

SANBORN, M.P. Working with parents. In : COLANGELO, N., ZAFFRANN, R.T. *New voices in counseling the gifted*. Dubuque : Kendall/Hunt, c1979, pp. 396-401.

SCHWARTZ, Lita L. Are you a gifted parent of a gifted child? *Gifted Child Quarterly* 25 (1) Winter 1981 : 31-35.

SMALTZ, Janet M., MATHISEN, J.D. Meeting the educational needs of the gifted, North Dakota. In : CROW, L.D., CROW, Alice. *Educating the academically able : a book of readings*. New York : David McKay, c1963, pp. 74-76.

SOUTHWORTH, June. Is your child 'impossible'? Take heart, he may well be gifted. *Mentor* 61 (5), Oct. 1979 : 187.

STENSRUD, R., STENSRUD, Kay. Discipline : an attitude, not an outcome. *The Educational Forum* XLV (2), Jan. 1981 : 161-167.

SUMPTION, Merle R., LUECKING, Evelyn M. *Education of the gifted*. New York : Ronald Press, c1960.

TAYLOR, C.A., VAN DER WESTHUIZEN, C.P. *Die onderrig van die begaafde kind*. Durbanville : Boschendal, 1983.

THOM, D.A., NEWELL, Nancy L. Hazards of the high IQ. In : FRENCH, J.L. *Educating the gifted : a book of readings*. New York : Holt and Company, c1959, pp. 331-347.

THOMAS, G.I., CRESCIMBENI, J. *Guiding the gifted child*. New York : Random House, c1966.

THORNE, Alison. Suggestions for mothering the gifted to encourage curiosity, learning and creativity. In : GOWAN, J.C., KHATENA, J., TORRANCE, E.P. *Creativity : its educational implications*. 2nd ed. Dubuque : Kendall/Hunt, c1981, pp. 236-239.

THONELSON, S.W. The importance of teacher self-concept to create a healthy psychological environment for learning. *Education* 102 (1), Fall 1981 : 96-100.

TORRANCE, E.P. Creative teaching makes a difference. In : BARBE, W.B., RENZULLI, J.S. *Psychology and education of the gifted*. 3rd ed. New York : Irvington Publishers, c1981, pp. 433-447.

VERNON, P.E., ADAMSON, Georgina, VERNON, Dorothy F. *The psychology and education of gifted children*. London : Methuen, 1977.

WILLINGS, D. *The creatively gifted : recognizing and developing the creative personality*. Cambridge : Woodhead-Faulkner, 1980.

WOODLIFFE, Helen M. *Teaching gifted learners : a handbook for teachers*. Ontario : Ontario Institute for Studies in Education, c1977.

CHAPTER 7: CURRICULUM DEVELOPMENT FOR GIFTED PUPILS

BOLSOVER, Joan L.M. Exploring the concept of 'Myth' with a group of 10/11 year old children. Gifted Ed. Int. Vol. 1, 1983 : 114-116.

CALLAWAY, W.R. A holistic conception of creativity and its relationship to intelligence. The Gifted Child Quarterly Vol. 13, Winter 1969 : 237-241.

HUNKINS, F.P. Curriculum development : program improvement. Columbus, Ohio : Merrill, 1980.

KAUFMAN, R., ENGLISH, F.W. Needs Assessment : concept and application. Englewood Cliffs, New Jersey : Educational Technology Publications, 1979.

KRüGER, R.A. Beginsels en kriteria vir kurrikulumontwerp. Pretoria : HAUM, 1980.

MAREE, P.J. 'n Verantwoording van die plek van Latyn in die skoolkurrikulum. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

MENTZ, H.C. Die onderrig in funksie. In : LOUW, W.J., MöLLER, A.K., MENTZ, H.C. Verbandlegging in die Didaktiese Pedagogiek. Pretoria : Academica, 1983.

NICHOLLS, Audrey, NICHOLLS, S.H. Developing a curriculum. London : George Allen & Unwin, 1978.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die Onderwys. Verslag van die Hoofkomitee : Onderwysvoorsiening in die RSA. Pretoria, 1981.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING : Ondersoek na die Onderwys. Verslag van die Werkkomitee : Kurrikulering. Pretoria, 1981.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die Onderwys. Verslag van die Werkkomitee : Onderwys vir kinders met spesiale onderwysbehoeftes. Pretoria, 1981.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING : Werkkomitee : Onderwys vir hoogbegaafde leerlinge. Konsepverslag : Kurrikulumontwikkeling vir hoogbegaafde leerlinge. Pretoria, 1984.

SAWYER, W.W. Some thoughts on education and Mathematics. Gifted Ed. Int. Vol. 1, 1983 : 65-69.

SUID-AFRIKA (Republiek). Witskrif oor onderwysvoorsiening in die Republiek van Suid-Afrika. Pretoria : Staatsdrukker, 1983.

TABA, Hilda. Curriculum development. Theory and practice. New York : Harcourt Brace & World, 1962.

TANNER, D., TANNER, L.N. Curriculum development. Theory into practice. New York : Macmillan, 1980.

TYLER, R.W. *Basic principles of curriculum and instruction*. Chicago : University of Chicago Press, 1949.

VAN DER STOEP, F., LOUW, W.J. *Inleiding tot die Didaktiese Pedagogiek*. Pretoria : Academica, 1976.

WALTERS, S.W. *The design of a theoretical model and criteria for the construction of a curriculum for Physical Science*. Cape Town : University of Cape Town, 1978. (Unpublished Ph. D. thesis)

WHEELER, D.K. *Curriculum process*. London : University of London Press, 1983.

CHAPTER 8: GUIDELINES: CURRICULUM DESIGN FOR SUBJECTS, GROUPS OF SUBJECTS AND LEADERSHIP AS A SPECIFIC TALENT

LANGUAGES

ABRAHAM, W. *Common sense about gifted children*. New York : Harper & Row, 1958.

BRITTON, J. *Language and learning*. Penguin, 1974.

BRUNNER, J.S. *Toward a theory of instruction*. Harvard University Press, 1975.

BRUNNER, J.S. *The process of education*. Harvard University Press, 1960.

EVANS, T. *Teaching English*. London : Croom Helm, 1982.

GUILFORD, A.M. *et al*. Aspects of language development in the gifted. *Gifted Child Quarterly* Vol. 25, 1981.

HELSON, R. Women mathematicians and the creative personality. *Journal of Consulting and Clinical Psychology* 1971.

HOLLAND, J., AUSTIN, A. The prediction of achievement of undergraduates of superior aptitude. *Journal of Educational Psychology* 1962.

HOURDD, M.L. *The education of the poetic spirit*. Heinemann, 1949.

HOYT, D.P. *The relationship between college grades and adult achievement*. Iowa City College Testing Report no. 7, 1965.

KELLMER-PRINGLE, M.L. *Able misfits*. Longman, 1970.

LAYCOCK, S.R., MUNRO, B.C. *Educational Psychology*. Pitman, 1972.

CALLOW, R. *Schools Council Programme 4*. 1982.

CHOAT, E. *Children's acquisition of Mathematics*. NFER, 1978.

DE BONO, E. *Teaching thinking*. Maurice Temple Smith.

DOWKER, Y.N., DOWKER, C.H. Helping the gifted child with Mathematics. *Journal of the gifted child* no. 1, 1979.

GAGNE, R.M. *The conditions of learning*. Holt, Rinehart and Winston, 1967.

GARDNER, M. *Mathematical puzzles and diversions and more Mathematical puzzles and diversions*. Penguin Books, 1966.

GOUWS, M. *Education for mentally highly gifted pupils : a preliminary study*. Pretoria : Human Sciences Research Council, 1977.

GREENES, C. Identifying the gifted student in Mathematics. *The Arithmetic Teacher* 28 (6) Feb. 1981.

HEID, K. Characteristics and special needs of the gifted student in Mathematics. *The Mathematics Teacher* 76 (4) April 1983.

HOLLAND, R.D. *Mathematics Enrichment Cards*. Hart-Davis Educational (Macmillan), 1975.

JACOBS, H.R. Mathematics and the imagination. *The Mathematics Teacher* 76 (4) April 1983 : 245-275.

KELSEY, K. *Number puzzles and more number puzzles*. Frederick Muller, 1981.

KOETKE, W. Computers and the Mathematically gifted. *Mathematics teacher* 76 (4) April 1983.

KRUTETSKII, V.A. *Psychology of Mathematical abilities in schoolchildren*. The University of Chicago Press, 1976.

LEWIN, J., LEWIN, M. The role of a flexible relationship between high schools and universities in the education of Mathematically gifted young people. *Spectrum 19*, March 1981.

SCHULMAN, L. Classroom activities for students. *The Arithmetic Teacher* 28 (6) Feb. 1981.

SOUTH ESSEX SIXTH FORM COLLEGE. *A Mathematics Supplement*.

STANLEY, J.C., KEATING, D.P., FOX, L.H. *Mathematical talent, discovery, description and development*. Johns Hopkins University Press.

STRAKER, A. Schools Council Programme 4. *Mathematics for gifted pupils*. Longman, 1983.

TORRANCE, E.P. *Gifted children in the classroom*. Macmillan, 1965.

TRAFTON, P. Providing for Mathematically able students. *The Arithmetic Teacher* 28 (6) February 1981 : 12-64.

VAN ZYL, J.A. *Enrichment exercises in Mathematics*. Books 2 to 5. Maskew Miller, 1977.

VERNON, P.E. ADAMSON, G., VERNON, D.F. *The Psychology and Education of gifted children*. Methuen, 1977.

WAIN, G.T., WOODROW, E. *Mathematics Teacher Education Project*. Blackie.

BRANDWEIN, P.F. *The gifted as future scientist*. Ventura California : Ventura County Superintendent of Schools Office, 1981.

KUBIE, L. Some unresolved problems of the scientific career. *American Scientist*, Oct. 1953 : 596-613.

MARGENAU, H. *The nature of physical reality : a philosophy of modern Physics*. New York : McGraw-Hill, 1950.

MATTHEWS, C.C. Classroom conditions, instructional objectives and evaluation in Elementary School Science. In : GOOD, R.G. *Science - children*. Dubuque, Iowa : Brown, 1972, p. 368.

ROBINSON, J.T. Science teaching and the nature of Science. In : GOOD, R.G. *Science - children*. Dubuque, Iowa : Brown, 1972, pp. 47-66.

ROE, Anne. *The making of a scientist*. New York : Dodd, Mead, 1953.

WALTERS, S.W. *Die natuurwetenskaplik-begaafde hoërskoolleerling in die Kaapprovinsie*. Stellenbosch : Universiteit van Stellenbosch, 1964. (M.Ed.-verhandeling)

MATHEMATICS

AXFORD, L.B. *A directory of educational programs for the gifted*. Scarecrow Press, 1971.

BEHR, A.L. Educating the gifted - some psycho didactical considerations. *S.A. Journal of Education* Vol. 3, no. 2, June 1983.

BOLT, B. *Mathematical activities*. Cambridge University Press, 1982.

BORENSON, H. Mathematical research in the Honors Classroom. *The Mathematics Teacher* 76 (4) April 1983.

BOTES, W.L. *Wiskundige begaafdheid : 'n empiriese ondersoek*. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1976.

TORRANCE, E.P. *Gifted children in the classroom*. Macmillan, 1965.

VERNON, P.E. *Gifted Children*. Methuen & Co., 1977.

WALLACE, B. *Provisions for gifted children in Essex*. (Unpublished article)

WALLACE, B. *Provisions for gifted children*. (Unpublished article)

WITTY, P. Educational Programmes for the gifted. Schools and society no. 87, 1959.

TECHNICAL SCIENCE

ABRAHAM, W. Common sense about gifted children : New York, 1958.

DAVIS, E. Teachers as curriculum evaluators. Sydney, 1980.

EVERETT, S. Programs for the gifted. New York, 1961.

FRENCH, J.L. Educating the gifted. New York, 1959.

HASS, G. Curriculum planning. London, 1980.

JOOSTE, J.H. Onderwysvoorsiening vir die hoogbegaafde leerlinge in Transvaal. Onderwysbulletin 1981.

KAPLAN, S.N. et al. Curricula for the gifted. Ventura, 1982.

PARRISH, B.M. Education of the gifted. New York, 1964.

TUTTLE, F.B. Program design and development for gifted and talented students. Washington, 1980.

SOCIAL SCIENCE

BOARD OF EDUCATION FOR THE BOROUGH OF ETOBICOKE. Advancement program. Toronto, 1981.

DAVIS, E. Teachers as curriculum evaluators. Sydney, 1980.

JORDAN, J.B., GROSSI, J.A. An administrator's handbook on designing programs for the gifted and talented. Virginia, 1980.

KAAPPROVINSIE (Onderwysdepartement). Sillabusse vir Omgewingsleer, Geskiedenis en Aardrykskunde.

KAPLAN, S.N. et al. Curricula for the gifted. Ventura, 1982.

KAPLAN, S.N. In-service Training Manual : activities for developing curriculum for the gifted/talented. Maryland, 1979.

METROPOLITAN SEPARATE SCHOOL BOARD. Models and strategies for classroom enrichment. Toronto, 1981.

NATIONAL COUNCIL FOR SOCIAL STUDIES. Social Studies for the academically talented student. Washington, 1960.

ONTARIO MINISTRY OF EDUCATION. Curriculum ideas for teachers : gifted/talented children. Toronto, 1978.

ONTARIO MINISTRY OF EDUCATION. Curriculum ideas for teachers : History and Geography, intermediate division. Toronto, 1979.

RENZULLI, J.S. *A guidebook for evaluating programs for the gifted and talented*. Ventura, 1975.

STATE EDUCATION DEPARTMENT, NEW YORK. *Developing defensible differentiated programs for the gifted and talented*. New York, 1980.

PHYSICAL SCIENCE SUBJECTS

ANDERSON, R.D. Formulating objectives for Elementary Science. In : GOOD, R.G. *Science - children*. Dubuque, Iowa : Brown, 1972, p. 370.

MARLAND, M. *Language across the curriculum*. Heinemann, 1972.

McCURDY, H. *The childhood pattern of genius*. Horizon, 1960.

MEDNICK, M.T. Research creativity in Psychology graduate students. *Journal of Consulting Psychology*, 1963.

MILES, C. Gifted children. Manual of Child Psychology 1954.

MUNDAY, L.H., DAVIS, J.C. *Varieties of accomplishment after college*. Iowa City Research Report no. 62., 1974.

PIAGET, J. *The psychology of intelligence*. New York : Harcourt, Brace, 1950.

RENZULLI, J.S., SMITH, L.H. *Scales for rating the behavioral characteristics of superior students*. Creative Learning Press, 1976.

RENZULLI, J.S., SMITH, L.H. *The Strength A-lyzer*. Creative Learning Press, 1976.

ROBERTS, S. WALLACE, B. *Educating the gifted child*. R. Povey (ed). Harper & Row, 1980.

ROE, A. *The making of a scientist*. Dodd, Mead, 1952.

TABA, H. *et al*. *A teacher's handbook of elementary Social Studies*. Addison-Wesley, 1971.

TEMPEST, N.R. *Teaching clever children 7-11*. Routledge & Kegan Paul, 1974.

TERMAN, L.M. *et al*. *Genetic studies of genius*. Stanford University Press, 1926.

TERMAN, L.M. *The gifted child grows up. Vol. IV*. Stanford University Press, 1947.

CHAPTER 9: THE TRAINING OF TEACHERS FOR GIFTED PUPILS

BISHOP, W.E. Characteristics of teachers judged successful by intellectually gifted, high achieving high school students. In : BARBE, W.B., RENZULLI, J.S. *Psychology and education of the gifted*. 2nd ed. New York : Irvington Publishers, c1975.

CAWOOD, J. Verslag van die vierde internasionale konferensie oor begaafde en talentvolle kinders. Montreal, Quebec, 20-25 Augustus, 1981.

CLARK, Barbara. Growing up gifted : developing the potential of children at home and at school. 2nd ed. Columbus : Merrill, c1983.

CUTTS, Norma, E., MOSELEY, N. Teaching the bright and gifted. Englewood Cliffs : Prentice-Hall, c1958.

GALLAGHER, J.J. Teaching the gifted child. 2nd ed. Boston : Allyn and Bacon, c1975.

GEARHEART, B.R. Special education for the 80's. St. Louis : Mosby, 1980.

GOLD, M.J. Education of the intellectually gifted. Columbus : Merrill, c1965.

GOODALE, R.A. Methods for encouraging creativity in the classroom. In : BARBE, W.B., RENZULLI, J.S. Psychology and education of the gifted. 3rd ed. New York : Irvington Publishers, c1981, pp. 375-385.

GOUWS, M. Die onderwys van begaafde kinders in die VSA. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1983.

GOWAN, J.C., DEMOS, G.D. The education and guidance of the ablest. Springfield : Charles C. Thomas, c1964.

HAASBROEK, J.B., JOOSTE, J.H. Die identifisering van hoogbegaafde leerlinge met verwysing na onderwysprogramme in die opleiding van onderwysers. Pretoria : Raad vir Geesteswetenskaplike Navorsing, 1981.

HILDRETH, Gertrude H. Introduction to the gifted. New York : McGraw-Hill, c1966.

JOHNS HOPKINS UNIVERSITY. Graduate degree programs with a concentration in the areas of the gifted child. Information Sheet, 1981.

KHATENA, J. Education Psychology of the gifted. New York : Wiley, c1982.

NEETHLING, J.S. Onderwys vir die begaafde kind : 'n wetenskaplike ondersoek na die onderwys van begaafde leerlinge in die V.S.A. en Brittanje. s.l. : s.n., 1981.

PASSOW, H. A universal view of gifted and talented programs. Paper read at the Fifth World Conference on Gifted and Talented Children, Manilla, Philippines, 2-6 August 1983.

RENZULLI, J.S. The University of Connecticut's graduate study in special education of the gifted and talented. Storrs : Department of Educational Psychology, Connecticut School of Education, 1978. (Unpublished brochure)

RICE, J.P. The gifted : developing total talent. Springfield : Charles C. Thomas, c1970.

SISK, Dorothy. Teaching the gifted and talented teacher : a training model. Tampa, Florida : University of South Florida, 1979. (Unpublished brochure)

STAHL, R.L. Gifted and talented. Boone, North Carolina : Appalachian State University, Department of Special Education, 1978. (Unpublished brochure)

TAYLOR, C.A., VAN DER WESTHUIZEN, C.P. Die onderrig van die begaafde kind. Durbanville : Boschendal, 1983.

TRANSVAALSE ONDERWYSDEPARTEMENT. Onderwyskollege vir Verdere Opleiding. Verdere Diploma in Onderwys : Die begaafde kind. Ongepubliseerde konsepkurrikulum saamgestel deur die Departement Buitengewone Onderwys. Pretoria, 1983.

UNIVERSITY OF GEORGIA. Department of Educational Psychology. Graduate programs in education of the gifted. Athens, Georgia. 1976. (Unpublished brochure)

WALLACE, S.D. Survey of teacher education. Ondersoek geloods namens die RGN-werkkomitee : Onderwys vir hoogbegaafde leerlinge, 1983.

CHAPTER 10: ONDERWYSKUNDIGE EN ONDERWYSBESTUURSTRUKTUUR VIR DIE ONDERWYS VAN BEGAAFDE LEERLINGE

MAKER, C.J. Providing programs for the gifted handicapped. Virginia : Council for Exceptional Children, 1977.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die onderwys. Verslag van die Hoofkomitee : Onderwysvoorsiening in die RSA. Pretoria, 1981.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Ondersoek na die onderwys. Verslag van die Werkkomitee : Onderwysstelselbeplanning. Pretoria, 1981.

RAAD VIR GEESTESWETENSKAPLIKE NAVORSING. Werkkomitee : Onderwys vir hoogbegaafde leerlinge : Verslag van die Projekkomitee : Onderwysvoorsieningsraamwerk vir hoogbegaafde leerlinge. 1983.

SUID-AFRIKA (Republiek). Witskrif oor onderwysvoorsiening in die Republiek van Suid-Afrika. Pretoria : Staatsdrukker, 1983.

TAYLOR, C.A., VAN DER WESTHUIZEN, C.P. Die onderrig van die begaafde kind. Durbanville : Boschendal, 1983.

WHITMORE, J.R. Gifted children with handicapping conditions : a new frontier. Exceptional Children. Vol. 48, no. 2, Oct. 1981.